# The Chemical Age

**A Weekly Journal Devoted to Industrial and Engineering Chemistry**

VOL. XVIII. No. 468 JUNE 16, 1928 Prepaid Annual Subscription: United Kingdom, £1.1.0; Abroad, £1.5.0.

## Contents

| | PAGE |
|---|---|
| EDITORIAL NOTES: Chemical Plant Materials; Russian Chemical Literature; Non-Inflammable Solvents; Official Changes; A French Fuel Conference | 545 |
| The Courtauld Biochemical Institute | 547 |
| Chemical Trade Returns for May | 548 |
| Chemical Matters in Parliament: Appointments Vacant | 551 |
| From Week to Week | 552 |
| References to Current Literature | 553 |
| Patent Literature | 554 |
| Weekly Chemical Prices and Market Reports | 556 |
| Company News; New Trade Marks; Chemical Trade Inquiries | 562 |
| Commercial Intelligence; New Companies Registered | 564 |
| THE CHINA CLAY TRADE REVIEW | 5–10 |

*NOTICES:—All communications relating to editorial matter should be addressed to the Editor, who will be pleased to consider articles or contributions dealing with modern chemical developments or suggestions bearing upon the advancement of the chemical industry in this country. Communications relating to advertisements or general matters should be addressed to the Manager.*

*The prepaid subscription to* THE CHEMICAL AGE *is 21s. per annum for the United Kingdom, and 26s. abroad. Cheques, Money Orders and Postal Orders should be made payable to Benn Brothers, Ltd.*

*Editorial and General Offices: Bouverie House, 154, Fleet Street, London, E.C.4.*

Telegrams: "Allangas, Fleet, London." Telephone: City 0244

## Chemical Plant Materials

AN interesting point relating to plant construction is mentioned in the later reports of the recent fire at the sulphuric acid works of the United Alkali Co., at Widnes. Some six chambers were involved in the fire, and one of these, built of steel and lined with lead in the same way as the wooden chambers, remained standing. One cannot safely infer very much from this until the full details are known, but the fact that the steel chamber stood the severe test is another illustration of the importance of the materials used in chemical plant construction. Of late years it has become recognised that in the long run it is good economy, especially in cases where plant is exposed to highly corrosive action, to obtain the best materials possible, though the initial cost may be somewhat higher. For instance, cases have come to our knowledge recently of very large units being constructed entirely of stainless steel, which is certainly now regarded with favour. Enamelled, and a number of other kinds of special ware marked an improvement on the earlier types, but we have heard those responsible for large chemical plants, without depreciating the value of other materials, declare that where the cost was not prohibitive their choice would always be in favour of stainless steel. On the other hand, we have known cases where difficulty was experienced in welding and jointing operations, owing to unfamiliarity with a rather unusual material. These experiences are, of course, to be expected, and the discovery of incidental handicaps is the first stage to the discovery of a remedy for them. What is steadily becoming clearer is the fact that quality, not cost, is the chief consideration. The large scale on which chemical operations are now conducted, the greatly increased strain involved in high pressure work, and the importance of freedom from contamination in the product all call for a higher standard of endurance and purity, and economy in plant design and construction has come to mean ultimate efficiency rather than the restriction of initial outlay.

## Russian Chemical Literature

VOLUME LIX and the four parts of Volume LX of the *Journal of the Russian Chemical Society* which have appeared during the past sixteen months have so much returned to the normal pre-war standard and character of this well-known scientific contemporary that special reference to it seems almost out of place. Like the *Annales de Chimie*, the chief chemical journal of France, the *Journal of the Russian Chemical Society* was practically annihilated during the Revolution. When it started to reappear it underwent recovery very slowly, during which time comments on its activities which have appeared from time to time in THE CHEMICAL AGE were encouraging and seemed to us desirable; but the level it has reached now is that of the orthodox journal of any of the leading chemical societies, with which it can be favourably compared in every respect. The wonderful recovery of scientific work in Russia is plentifully evident from the excellent researches published from the older universities in Moscow, Petrograd, Kazan, and Kieff and from the numerous new universities which have sprung up all over Russia. There is no doubt that chemical science in Russia has reached pre-war standard, and Russia is again becoming recognised as the land where Zinin, Saytzeff, Mendelejeff, Zelinsky, Tschugajeff, Ipatjeff and many other famous men have worked. Several of those named are among the living, and they are handing on the old chemical traditions to the new generation of Russian chemists to whom we look with confidence and admiration.

Few in this country have done as much as Professor W. P. Wynne to encourage the recovery of chemistry in Russia. As soon as his Presidential Address of 1924 to the Chemical Society, entitled "Some Aspects of Russia's Contribution to Chemistry," appeared, it

was translated into Russian, and there have been many references to it in the Russian chemical journals. His address has served as a source of encouragement to many who have struggled to reinstate Russian chemistry, and it seems therefore appropriate to remind British chemists of Professor Wynne's services to chemistry in general and to Russian chemistry in particular.

## Non-Inflammable Solvents

THE staff of Imperial Chemical Industries are to be congratulated on the lucid and practical character of the technical booklets they issue from time to time explaining the chemical properties and commercial uses of their various products. The most recent received is a twenty-page pamphlet on *The Chlorine Derivatives of Ethane and Ethylene*, which deals in detail with six derivatives—dichlorethylene, trichlorethylene ("Westrosol"), perchlorethylene, tetrachlorethane ("Westron"), pentachlorethane, and hexachlorethane, forming a series of non-inflammable solvents, with boiling points ranging from 55° C. to 159° C. These products, as the pamphlet shows in detail, are of value in a wide variety of industries, especially for use as solvents and as degreasing agents, as well as in the production of rubber cements, in the paint and varnish industries, for oil extraction, and as insecticides and sterilisers. Not the least of the advantages of these derivatives is that they are non-inflammable, a point of great importance, for example, in dry cleaning, where the danger arising from the use of inflammable solvents has in the past been very considerable. We are informed that readers of THE CHEMICAL AGE may obtain free copies of the pamphlet on application to Imperial Chemical Industries, Ltd., Nobel House, Buckingham Gate, London, S.W.1, or to their sales offices at Belfast, Birmingham, Bristol, Dublin, Gateshead-on-Tyne, Leeds, Leicester, Liverpool, London, and Manchester.

## Official Changes

CONSIDERABLE interest has been aroused by a recent official announcement that the Society of Chemical Industry is seeking the services of an assistant secretary, a University man with ability for and preferably experience in office organisation, accounts, committees, conferences, reports, and publicity. The qualifications required seem to point to a responsible position and to indicate some modification of the existing arrangements. We are unable to answer inquiries, because no official information is available, but no doubt at the proper time a statement on the subject will be made for the information of the members. It is interesting to note that one of the qualifications desired in the new official is experience in "publicity." Some time has elapsed since we first ventured to suggest that a Society with so many excellent activities had everything to gain and nothing to lose by making its objects and work as widely known as possible, and the frank recognition of this is a favourable sign. In the meantime we should advise those who are interested in the subject not to draw any hasty inferences, but to await the authoritative statement that will no doubt in due course be made.

## A French Fuel Conference

IN addition to the Coal Conference at Pittsburgh and the World Power Conference in London, previously noticed, particulars have reached us of another important French conference—the Congrés du Chauffage Industriel to be held in Paris on June 23–30. The first of these French conferences was held in 1924, and it is intended that they should be held every four years. They are under the auspices of the French Government and various organisations representing especially the chemical and mining industries. The President d'honneur is the well-known scientist, now advanced in years, Henri le Chatelier, and the President is M. Walckenaer, who, if our memory can be trusted, is the chief mining inspector of France. A large number of papers, covering a very wide field, are to be presented, which we are interested to note include two by Mr. David Brownlie, who has specialised in this field for many years—one giving a world survey of the low-temperature carbonisation of coal and lignite, and the other a similar survey of the low-temperature carbonisation of shale. The fact that over 120 processes are to be described indicates the amount of work done in this line, and the research needed to collect particulars. For those of our readers who may be interested it may be well to state that the address is Congrés du Chauffage Industriel, Au Ministère des Travaux Publiques, 246, Rue St. Germain, Paris, the General Secretary being M. Pierre Appell.

### Books Received

THE CHEMISTRY OF WINE MAKING. A Report on Œnological Research. By Dr. J. T. Hewitt. London: H.M. Stationery Office. Pp. 57. 1s.

## The Calendar

| | | |
|---|---|---|
| June 18 | Armourers and Brasiers' Company Lecture: "The Founding of Aluminium and Its Light Alloys." George Mortimer. | Royal School of Mines, South Kensington, London. |
| 19 | Armourers and Brasiers' Company Lecture: "The Heat Treatment of Steel." Dr. J. M. Robertson. | Battersea Polytechnic, London. |
| 21 | Chemical Society: Ordinary Scientific Meeting. 5.30 p.m. | Burlington House, Piccadilly, London. |
| 21 | British Science Guild: Annual General Meeting. 5 p.m. | Hall of the Royal Society of Arts, London. |
| 21 | Royal Society. 4.30 p.m. | Burlington House, Piccadilly, London. |
| 23 to 30 | Congrés du Chauffage Industriel. | Conservatoire National des Arts et Metiers de Paris. |
| 26 | World's Dairy Congress. | Central Hall, Westminster, London. |
| 26 | National Physical Laboratory: Annual Visit of Inspection. 3 to 6 p.m. | Teddington. |
| 27 | Ceramic Society: Visit of American Ceramic Society. | Stoke-on-Trent. |
| 28 | Society of Glass Technology. 11.15 a.m. | University, Sheffield. |
| 28 | British Chemical and Dyestuffs Traders' Association: Fifth Annual General Meeting. 2.30 p.m. | London. |
| July 9 & 10 | Merchandise Marks Inquiry: Pumps. 11.30 a.m. on Monday, July 9, and 10.30 a.m. on Tuesday, July 10. | Board of Trade, Great George Street, London. |
| 9 to 14 | Royal Photographic Society: International Congress of Photography. | London. |
| 10 | University College, Nottingham: Opening of the New University College Buildings. | Nottingham. |

# A New Bio-Chemical Institute Opened

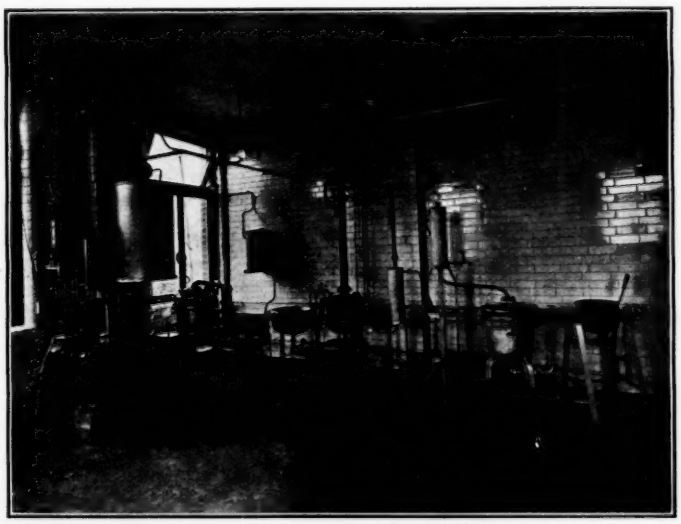
## Mr. S. A. Courtauld's Gift to Middlesex Hospital

THE Courtauld Institute of Biochemistry, the gift of Mr. S. A. Courtauld to the Middlesex Hospital was opened on Thursday by H.R.H. Prince Arthur of Connaught, chairman of the Board of Governors of the hospital.

The basement, sub-basement and ground floor, containing boiler house, engineering plant and restaurant, are given over to hospital uses and from the first floor upwards is the Institute. After careful consideration, both from the point of view of the building and of the administration, it was decided to adopt a more or less new principle in constructing the Institute. Small rooms, which are usually found in such research institutes, except for very special purposes such as incubation and dark-rooms, have been avoided, and a series of large, fully equipped laboratories substituted. The first floor contains a large laboratory for students with a preparation room and store; on the second floor is a clinical routine laboratory, with three examining rooms; and on the third floor is a large research laboratory, with combustion and balance rooms, together with a large-scale preparation room. Library, optical dark-room, standardisation laboratory and the professor's private room and laboratory are on the fourth floor, while extensions of space are provided for on the fifth floor. The laboratories are fitted up very carefully, every bench and its detailed fittings having had individual consideration. Drainage methods have had special attention, pipes being made of chemically pure lead to prevent deterioration through chemical action. The pipes are laid in inclined concrete channels lined with asphalt and are connected to the main stacks by iron sleeving. The fouling of ducts has been dealt with by introducing laboratory traps to every isolated sink or group of sinks.

THE RESEARCH LABORATORY.

The laboratories in all cases have white glazed brick walls, ample ventilation and a large area of window space. Heating is provided by hot-water pipes suspended from the ceilings. The building has been completely erected in eighteen months.



LARGE SCALE PREPARATION ROOM.

# Chemical Trade Returns for May

## Five Months' Exports Increased by over £1,000,000

THE Board of Trade Returns for May indicate that imports of chemicals, drugs, dyes and colours for the month were valued at £1,306,454, an increase of £187,071 on 1927 and of £267,033 on 1926; exports in May were valued at £2,358,576, an increase of £116,787 on 1927 and of £631,118 on 1926; and re-exports of imported merchandise were valued at £90,234, an increase of £1,288 on 1927 and of £41,123 on 1926. For the five months ended May 31, imports were valued at £6,693,146, a decrease of £137,104 on 1927 and an increase of £538,758 on 1926; exports at £10,640,392, an increase of £1,097,850 and of £1,031,416 on 1926; and re-exports of imported merchandise at £405,546, an increase of £10,048 on 1927 and a decrease of £45,237 on 1926. Details:—

### Imports

| | Quantities. Month ended May 31, 1927. | Quantities. Month ended May 31, 1928. | Values. Month ended May 31 1927. | Values. Month ended May 31 1928. |
|---|---|---|---|---|
| CHEMICAL MANUFACTURES AND PRODUCTS— | | | £ | £ |
| Acid Acetic.....tons | 797 | 1,316 | 36,201 | 59,779 |
| Acid Tartaric.....cwt. | 3,370 | 2,683 | 17,681 | 17,487 |
| Bleaching Materials „ | 8,127 | 10,107 | 10,558 | 8,135 |
| Borax..... „ | 10,390 | 8,321 | 12,087 | 7,236 |
| Calcium Carbide... „ | 53,889 | 61,018 | 32,824 | 37,085 |
| Coal Tar Products, not elsewhere specified value | — | — | 54,065 | 74,442 |
| Glycerine Crude...cwt. | 1,459 | 116 | 5,239 | 338 |
| Glycerine, Distilled „ | 301 | 1,456 | 1,413 | 5,929 |
| Red Lead and Orange Lead .....cwt. | 5,906 | 4,450 | 10,205 | 6,304 |
| Nickel Oxide..... „ | 57 | — | 330 | — |
| Potassium Nitrate (Saltpetre .....cwt. | 9,156 | 8,021 | 9,927 | 8,283 |
| Other Potassium Compounds.....cwt. | 169,693 | 192,526 | 55,550 | 69,713 |
| Sodium Nitrate ... „ | 72,364 | 93,333 | 50,648 | 55,569 |
| Other Sodium Compounds..... „ | 42,083 | 44,285 | 26,758 | 26,056 |
| Tartar, Cream of.. „ | 4,773 | 4,713 | 18,700 | 21,010 |
| Zinc Oxide .....tons | 1,071 | 1,072 | 34,913 | 33,039 |
| All other Sorts....value | — | — | 223,117 | 285,100 |
| DRUGS, MEDICINES, ETC.— | | | | |
| Quinine and Quinine Salts .....oz. | 179,033 | 87,615 | 14,080 | 6,459 |
| Bark Cinchona, etc. cwt. | 3,740 | 1,810 | 15,444 | 8,931 |
| Other Sorts .....value | — | — | 135,614 | 124,024 |
| DYES AND DYESTUFFS, ETC.— | | | | |
| Intermediate Coal Tar Products.....cwt. | 2 | 104 | 29 | 826 |
| Alizarine..... „ | 17 | 22 | 434 | 819 |
| Indigo, Synthetic.. „ | 13 | — | 91 | — |
| Other Sorts ..... „ | 3,600 | 3,171 | 76,806 | 75,797 |
| Cutch ..... „ | 4,011 | 3,432 | 7,184 | 6,239 |
| Other Dyeing Extracts cwt. | 4,068 | 6,631 | 12,578 | 22,647 |
| Indigo, Natural ... „ | — | — | — | — |
| Extracts for Tanning „ | 94,619 | 134,657 | 94,461 | 150,206 |
| PAINTERS' COLOURS AND MATERIALS— | | | | |
| Barytes, Ground, and Blanc Fixe.....cwt. | 55,814 | 55,083 | 12,459 | 12,125 |
| White Lead (dry).. „ | 10,208 | 17,478 | 16,200 | 27,116 |
| All other Sorts.... „ | 101,264 | 181,473 | 133,697 | 14,5851 |
| Total of Chemicals, Drugs, Dyes, and Colours ..... | — | — | 1,119,383 | 1,306,454 |

### Exports

| | | | | |
|---|---|---|---|---|
| CHEMICAL MANUFACTURES AND PRODUCTS— | | | | |
| Acid Sulphuric ....cwt. | 1,248 | 7,516 | 1,996 | 2,987 |
| Acid Tartaric ..... „ | 1,392 | 2,210 | 9,092 | 14,815 |
| Ammonium Chloride (Muriate) .....tons | 384 | 296 | 9,050 | 6,834 |
| Ammonium Sulphate— | | | | |
| To Spain and Canaries tons | 17,132 | 9,338 | 180,609 | 94,965 |
| „ Italy ..... „ | 360 | 94 | 3,843 | 957 |
| „ Dutch East Indies tons | 1,148 | 673 | 12,889 | 7,130 |
| „ Japan..... „ | 8,158 | 6,596 | 90,774 | 69,275 |
| „ British West India Islands and British Guiana tons | 728 | 2,542 | 8,349 | 25,675 |
| „ Other countries „ | 2,961 | 8,429 | 32,720 | 88,590 |
| Total .... „ | 30,487 | 27,672 | 329,184 | 286,592 |
| Bleaching Powder....cwt. | 57,208 | 63,435 | 26,183 | 22,156 |

| | Quantities. Month ended May 31, 1927. | Quantities. Month ended May 31, 1928. | Values. Month ended May 31. 1927. | Values. Month ended May 31. 1928. |
|---|---|---|---|---|
| COAL TAR PRODUCTS— | | | £ | £ |
| Anthracene .....cwt. | — | — | — | — |
| Benzol and Toluol galls. | 3,853 | 543,730 | 472 | 29,909 |
| Carbolic Acid.....cwt. | 13,282 | 21,955 | 28,771 | 38,985 |
| Naphtha .....galls. | 3,009 | 10,242 | 456 | 718 |
| Naphthalene .....cwt. | 880 | 4,970 | 694 | 2,525 |
| Tar Oil, Creosote Oil, etc. .....galls. | 4,115,404 | 7,665,139 | 137,589 | 283,499 |
| Other Sorts .....cwt. | 68,750 | 107,718 | 42,226 | 49,119 |
| Total ....value | — | — | 210,208 | 404,755 |
| Copper, Sulphate of..tons | 5,432 | 4,137 | 118,628 | 97,681 |
| Disinfectants, etc.....cwt. | 34,111 | 29,028 | 82,260 | 76,483 |
| Glycerine, Crude.....cwt. | 3,678 | 2,085 | 12,048 | 6,296 |
| Glycerine, Distilled .. „ | 6,259 | 10,493 | 30,683 | 35,735 |
| Total .... „ | 9,937 | 12,548 | 42,731 | 42,031 |
| POTASSIUM COMPOUNDS— | | | | |
| Chromate and Bi-chromate .....cwt. | 2,874 | 2,059 | 5,247 | 3,849 |
| Nitrate (Saltpetre). „ | 1,785 | 1,922 | 3,584 | 3,679 |
| All other Sorts .... „ | 4,517 | 4,708 | 18,431 | 13,474 |
| Total .... „ | 9,176 | 8,689 | 27,262 | 21,002 |
| SODIUM COMPOUNDS— | | | | |
| Carbonate, etc. ....cwt. | 516,070 | 468,028 | 149,348 | 126,828 |
| Caustic ..... „ | 248,477 | 209,118 | 177,518 | 134,990 |
| Chromate and Bi-chromate .....cwt. | 2,143 | 3,183 | 3,659 | 4,409 |
| Sulphate, including Salt Cake .....cwt. | 93,280 | 42,520 | 12,229 | 5,780 |
| All other Sorts .... „ | 62,210 | 63,317 | 82,346 | 81,511 |
| Total..... „ | 922,780 | 786,166 | 425,100 | 353,518 |
| Zinc Oxide.....tons | 115 | 97 | 5,031 | 4,004 |
| Total of Chemical Manufactures and Products ..... | — | — | 1,569,109 | 1,667,029 |
| DRUGS, MEDICINES, ETC.— | | | | |
| Quinine and Quinine Salts .....oz. | 123,096 | 193,347 | 15,652 | 19,056 |
| All other Sorts....value | — | — | 231,092 | 243,574 |
| Total .... „ | — | — | 246,744 | 262,630 |
| DYES AND DYESTUFFS— | | | | |
| Products of Coal Tar cwt. | 6,275 | 9,698 | 59,097 | 76,705 |
| Other Sorts ..... „ | 5,045 | 9,838 | 8,199 | 8,555 |
| Total .... „ | 11,320 | 19,536 | 67,296 | 85,260 |
| PAINTERS' COLOURS AND MATERIALS— | | | | |
| Barytes, Ground, and Blanc Fixe.....cwt. | 1,533 | 3,409 | 639 | 1,785 |
| White Lead (dry).. „ | 6,722 | 7,306 | 13,029 | 12,780 |
| Paints and Colours in paste form .....cwt. | 56,964 | 42,263 | 118,024 | 86,930 |
| Paints and Enamels Prepared .....cwt. | 32,727 | 40,616 | 114,569 | 130,716 |
| All other Sorts .... „ | 62,535 | 56,028 | 112,379 | 111,446 |
| Total .... „ | 160,481 | 149,622 | 358,640 | 343,657 |
| Total of Chemicals, Drugs, Dyes and Colours ...value | — | — | 2,241,789 | 2,358,57 |

### Re-Exports

| | Quantities. Month ended May 31, 1927. | 1928. | Values. Month ended May 31, 1927. £ | 1928. £ |
|---|---|---|---|---|
| CHEMICAL MANUFACTURES AND PRODUCTS— | | | | |
| Acid Tartaric.....cwt. | 140 | 92 | 843 | 767 |
| Borax..... ,, | 40 | 30 | 36 | 26 |
| Coal Tar Products. value | — | — | 10 | 8 |
| Potassium Nitrate (Saltpetre).....cwt. | 140 | 3,153 | 175 | 2,816 |
| Sodium Nitrate ... ,, | 948 | 1,040 | 635 | 568 |
| Tartar, Cream of .. ,, | 713 | 493 | 3,025 | 2,251 |
| All other Sorts....value | — | — | 39,850 | 26,569 |
| DRUGS, MEDICINES, ETC.— | | | | |
| Quinine and Quinine Salts .....oz. | 10,832 | 21,552 | 1,087 | 2,318 |
| Bark Cinchona, etc. cwt. | 146 | 719 | 654 | 4,996 |
| All other Sorts....value | — | — | 32,992 | 35,500 |
| DYES AND DYESTUFFS— | | | | |
| Cutch .....cwt. | 1,276 | 1,501 | 1,900 | 2,755 |
| All other Sorts.... ,, | 147 | 143 | 1,103 | 1,583 |
| Indigo, Natural ... ,, | 9 | 5 | 218 | 118 |
| Extracts for Tanning ,, | 392 | 467 | 625 | 649 |
| PAINTERS' COLOURS AND MATERIALS.....cwt. | 1,019 | 1,889 | 4,975 | 7,008 |
| Total of Chemicals, Drugs, Dyes and Colours....value | — | — | 88,946 | 90,234 |

## A Point In Income Tax Payment

### Two Collections in One Year?

A CHEMICAL correspondent sends us the following query relating to Income Tax payments :—

"Taxpayers are permitted at present, on written request, to be taxed on their professional income, fixed and fluctuating, for the current year as heretofore. This permission holds good for another year. After that time the demand of the Inland Revenue is for tax on the preceding year's income, *i.e.*, tax is paid twice over for that year. This, joined with an assurance from local surveyors that, in the last year of employment at full salary, tax will be collected for that year only and not on the preceding year.

It might be of interest to some of your readers if your income tax expert stated in your columns what are the safeguards that this will be done, or whether individuals can place on record that tax has been collected twice in one year.

### An Expert's Reply

This point has been referred to Mr. W. R. Fairbrother, 67-68, Cheapside, London, a well-known specialist in Income Tax matters, who replies as follows :—

"The query raised refers only to those persons who are employees and who are assessed under Schedule 'E' in respect of 'any office or employment or of any annuity, pension or stipend.'

"It is correct that under Section 45 (3) Finance Act, 1927, any persons who are assessed for the year 1927/28 on the actual income of that year, may elect to be assessed on the actual income for 1928/29, if notice is given to the Inspector of Taxes in writing prior to June 30, 1929. It is not correct to say that this permission holds good for another year. If a taxpayer elects to be assessed upon the actual income for the year 1928/29, then he must, without option, be assessed upon the actual income for the year 1929/30. Therefore, it is not possible for a taxpayer to be assessed for the year 1928-29 on the basis of his income for the year 1927/8 and then to claim to be assessed on his actual income for the year 1929-30. Nor can he claim to be assessed for the year 1929-30 on the income of the year 1928/29, if for the year 1928/29 he has elected to be assessed upon the actual income of that year.

"Tax is, in fact, paid for two years on the basis of the income of one year either in the years 1927/28 and 1928/29, or in the years 1929/30 and 1930/31, if the taxpayer has made the election as above. This does not amount to the same thing as saying that tax is paid twice over for a particular year.

"In the last year of employment the method of assessment is covered by the wording of Section 45 (5) of the Finance Act, 1927, as follows :—'Where in any year of assessment a person ceases to hold an office or employment or to be entitled to an annuity, pension or stipend chargeable under Schedule "E," tax shall be charged for that year on the amount of his emoluments for the period beginning on the sixth day of April in that year and ending on the date of the cessation.'

"This makes clear that tax will be collected for the last year on the actual income, whether it is less or more than the income assessed on the basis of the income of the preceding year. The Revenue also, in that section, reserve to themselves the right of increasing the assessment for the financial year last preceding the date of cessation up to the actual income of that year, if the actual income exceeded the amount assessed. The Revenue do not give a similar power to taxpayers to claim reduction to the actual income of the year preceding the year of cessation, if the income of that year fell short of the amount assessed.

"It is quite clear from the wording of the Finance Acts that in no case can Income Tax be collected twice for one year. It has, however, been pointed out in correspondence with various newspapers, that the provisions as they stand at present, involve the payment of Super Tax twice for one year. An assurance has, however, been given that this will be rectified in the Committee Stage of the Finance Bill, and it is not, therefore, necessary at the present time to go into the exact effect of those provisions."

## Power Alcohol in Australia

THE Australian imports of petrol and petroleum products are increasing rapidly, the value of imported petrol being more than £6,500,000 per annum. In a report issued recently by the Council for Scientific and Industrial Research of the Commonwealth, entitled "The Possibilities of Power Alcohol and Certain Other Fuels in Australia," this position is characterised as 'very unsatisfactory even in times of peace, but in times of emergency it becomes positively dangerous."

In reviewing possible Australian sources of power alcohol, it is pointed out that the starch-producing cereals are in general too important as foodstuffs to be utilised for other purposes; but in some Australian localities, it is pointed out, "the fermentation of certain varieties of tubers is by no means commercially unattractive even under present conditions and prices. Cassava, arrowroot, the sweet potato in the warmer climates, and perhaps beet in the milder, are at least worth consideration in this connection. Some sugar-producing grasses, for example, sorghum, also have prospects." Owing to the bulky nature of the raw materials, the conclusion is reached that at present it would be possible at the best to establish distilleries in favoured localities where the production of suitable high-grade materials presents no particular difficulty. In such districts imported petrol might be largely replaced by alcohol.

Technologically, the best raw material available in Australia for manufacturing power alcohol is molasses. As far as actual commercial achievement goes, a power alcohol distillery with a capacity of about 1,000,000 gallons per annum started production in February, 1927, at the Plane Creek sugar mill, near Mackay, Queensland. The raw materials are molasses and certain starchy crops, including cassava and arrowroot. The fuel, consisting essentially of a mixture of alcohol and ether, is marketed under the name of "powrac." As an extension of this enterprise it is proposed to erect other distilleries in the Cairns district of Queensland.

## Low Temperature Distillation of Alberta Coal

EXPERIMENTS with Albertan Red Deer Valley lignite or domestic coal by the Lignite Products Corporation of America at their Midland plant have been successful. Mr. A. D. McConnell, general manager of the corporation, together with the chief engineer of the concern, Mr. J. R. Newbury, inventor of the Newbury retort and other processing equipment, established an experimental coal processing unit at No. 1 Mine of the Midland Coal Mining Company, Ltd., and after two years the chemist and engineer have now achieved success. The experimental plant utilises electricity to heat the coal in vacuum. The raw coal enters the retort and passes through ten tables, being heated gradually by electricity to a temperature of 1,150° C. at the bottom table. The coal does not burn, being in vacuum all the time; after being cooled by water it is brought at the bottom as char, processed of all volatile matter. The gases are drawn off by a vacuum pump, cooled, and by-products extracted. The capacity of the experimental unit is a carload of char a day, or 35 tons.

### British Glues and Chemicals: Capital Reduction

In the Chancery Division, on Wednesday, Mr. Justice Maugham had before him the petition by British Glues and Chemicals, Ltd., for confirmation of a reduction of its capital from £2,000,000 to £1,300,000 by writing off £700,000 loss, as unrepresented by available assets.

Mr. Spens, K.C., for the company, said the capital was divided into £700,000 8 per cent. preference and £1,300,000 ordinary £1 shares, of which £875,000 of the ordinary shares had been issued. It was proposed to write off sixteen shillings from each of the issued ordinary shares. The company was incorporated in 1920 to acquire a number of businesses connected with glue, gelatine, and chemical manures. The purchase of the assets and goodwill of these businesses was made just at the end of the boom period after the war, and since then the company had been faced not only with a general depression of business but with a number of other difficulties; in particular there had been a world-wide shortage of raw material—bones for the company's business, which necessitated the closing down of a number of its scattered works and concentration in one or more works in areas where freight was cheaper and it was more convenient for business. The result was that, starting with comparatively small profits, the company had been unable to make a trading profit, chiefly on account of having to provide considerable sums for depreciation. In November last the board of directors, in conjunction with Sir Wm. Plender, considered the position and a committee of the board was appointed to investigate what the assets of the company were. A scheme was evolved of which the reduction of capital was a part, and an arrangement was proposed in regard to the ordinary and the preference shareholders, the latter having received no dividend since 1922.

His lordship confirmed the reduction.

### Institution of Civil Engineers: Visit to Hadfields

In connection with the Charter Centenary Celebrations of the Institution of Civil Engineers, Hadfields, Ltd., extended an invitation to the members to visit their East Hecla Works, and some forty or fifty members accepted the invitation, most of them journeying from London, on Thursday, June 7.

Hadfields attended to the travelling arrangements, and in order that the train journey might be as comfortable as possible they arranged with the London and North-Eastern Railway Co. to provide special coaches for the purpose; and on their arrival in Sheffield the visitors were conveyed by motor bus directly to the works, where they were entertained to lunch. They were then photographed and afterwards proceeded on a tour of the East Hecla Works. These works cover 225 acres, of which the steel foundries alone occupy 12 acres (the most extensive of their kind in the world). The plant is capable of a production of 200,000 tons of steel per annum, and during the war there were 15,000 persons employed. Railway lines within the works cover some 21 miles, of which 14 are broad-gauge. In passing through the works, special attention was given to crushing machinery (using "Era" manganese steel), dredging and excavating machinery, "Hecla" mining drill steel, "Resista" bullet-proof steel, heat and corrosion-resisting steels, etc.

### University Chemical Research Statistics

There has just been published the *Returns from Universities and University Colleges in Receipt of Treasury Grant* (H.M. Stationery Office, pp. 24, 3s.). The following figures are given for full-time advanced (research) students: Chemistry, 511; engineering, 141; physics, 132; botany, 83; geology, 52; mathematics, 47; zoology, 43; metallurgy, 42; agriculture, 35; physiology, 33. Commenting on the dominant position of chemistry, the Grants Committee suggests that the other sciences, and especially the biological sciences other than medicine, have been far too much neglected by advanced students at the universities. It observes also, in regard to chemistry, that the immediate demand is more for men who have combined a study of this subject with such other subjects as engineering, agriculture, bio-chemistry, and botany, than for men whose special knowledge is confined to the ordinary branches of pure chemistry.

## The Bedson Club Dinner

### Professor Clemo on Local Graduates for Local Industry

Professor G. R. Clemo, of Armstrong College, presided over the annual Bedson Club Dinner, in the College Union, at Newcastle, on Friday, June 8, when there was a large attendance of representative people from the chemical industry of Tyneside. Professor Reed (Yale University, U.S.A.) was one of the principal guests. Professor Reed is secretary of the Commonwealth Fellowship Fund. Mr. Herbert Shaw, secretary of the Chamber of Commerce, Newcastle, proposing the toast of the Bedson Club, said it was his ambition to have new industries established on Tyneside, and he looked to the chemists of the district assisting in that work, as they already had to a great extent. He considered the artificial silk industry was one eminently suitable for the district.

Professor G. R. Clemo, responding, regretted the absence of Dr. Bedson and Professor Briscoe, and welcomed Professor Reed. Of four awards of Commonwealth Fellowships to Armstrong College, two had been awarded to chemists, including the latest to Mr. R. Spence, B.Sc., who would proceed to Princeton (U.S.A.) in September. He reviewed the activities of the Bedson Club—now an institution in the chemical life of the district—and said some striking successes had been achieved by Bedsonians, including two good appointments with Imperial Chemical Industries. In some respects, however, that aspect of the work had been very unsatisfactory and even discouraging. During the three years he had been at Armstrong College only one chemistry graduate (first class honours) had secured an appointment locally, and that at a miserable salary. The result was that the graduate had either left or was leaving the district where he had been trained. Tyneside, which should be one of the most important chemical centres in the country, and crying out for the establishment of new chemical industries, was content to let its trained men from Armstrong College—all potential research workers—leave the district for other fields where the appreciation of their training seemed greater.

Sir Theodore Morison (principal of Armstrong College) proposed the toast of the guests, and Professor Reed replied, stressing the value of the Fellowship scheme in improving international relationships.

### Research and Development at Boots

The fortieth annual ordinary general meeting of Boots Pure Drug Co., Ltd., was held at the office of the company, Station Street, Nottingham, on Thursday, June 7, Mr. John Boot, J.P. (chairman of the company), presiding. In the course of his speech he said that last year he referred to the purchase of the Lenton estate. Now work was just starting on the first unit of the factories on their new site. Representatives of the company had visited the most modern plants, not only in this country, but also abroad. In their research department a large amount of work had been carried out on a variety of subjects; for example, vitamin D produced by the irradiation of ergosterol, liver extract for the treatment of pernicious anæmia, and ephedrine for the treatment of hay fever and asthma. For the last two or three years they had been manufacturing hexyl resorcinol. Referring again to vitamins, he said that all cod liver oil sold as such by the company, and used in various preparations under their own name, had been, and is, rigidly tested before being accepted, and was, therefore, of guaranteed vitamin potency. Through recent arrangements abroad, the company would have the support of some of the finest and most up-to-date works and the best scientific brains in the world. They were proud of their research department, and this new development would greatly strengthen their position on the scientific and medical side of their business. Whilst they guaranteed all goods which they manufactured themselves, and which bore their name, they sold many thousands of different patent medicines for which there was a public demand, and a few weeks ago they were fined under the Food and Drugs Act for selling certain tablets. He wanted to point out that those tablets were the proprietary line of another firm, who were alone responsible for the formula, ingredients, packing, and advertising; that they (Boots) had no shareholding or interest in that company, simply selling their tablets as retailers in common with thousands of other chemists; and that they had been reimbursed by them in the amount of the fine, costs and expenses.

## The Ethyl Petrol Inquiry

### A United States Expert Witness

THE sitting of the Ethyl Petrol Inquiry Committee held on Monday is expected to be the last public hearing, unless further witnesses come forward with fresh evidence.

The first witness was Dr. J. P. Leake, of the United States Public Health Service, who said that he shared the fears at first as to the possible dangers to public health in view of the fact that lead was a cumulative poison, and this substance was particularly poisonous. In 1924 there were a number of fatal poisoning cases in New Jersey, where lead tetraethyl was being made and handled, and this increased the public alarm. A conference was called, which was attended by all interested parties, and a resolution was passed asking the Government to appoint a committee of inquiry. This was done, consisting of eminent medical men and chemists, and their conclusion was that concentration of tetraethyl of 1 in 1,300 gave no definite signs of lead absorption in two years. In garages and places where men were employed handling this product, there were no detectable symptoms of lead poisoning, and the lead absorption and storage was not comparable with that in other industries. They also stated that in their opinion there were no grounds for prohibiting the sale of ethyl, provided regulations were adopted. The committee added, however, that if there was widespread use of this spirit, further regulations might be necessary.

#### Recent Investigations

Since the Committee's report, further examinations had been made, and there was no more lead found in the men's bodies than four years previously. There was nothing to indicate that if this work was carried out for another twenty years there would be any difference in the lead storage. They had no ground for believing that there was a slow chronic kind of lead poisoning as distinct from ordinary lead poisoning. If garage people did not suffer, the public were entirely free from danger. They knew there was a certain amount of lead found in garages, but they could not say whether it was from the coachwork of cars or the tyres. Certainly ethyl did not account for it all, as lead existed in garages where it was not kept. Considering the toxic character of lead tetraethyl he admitted he was surprised at first that he could not obtain evidence to convict it, when used as a fuel. It was quite possible for a case concerning an American private individual to be hushed up and the injured party receive compensation from the interested company for being poisoned from lead tetraethyl in petrol. This could not happen in the case of garage hands, however, if they were numerous.

Dr. Graham Edgar, of the Ethyl Gasoline Corporation, the first witness called at the inquiry, was recalled, in order to clear up certain points. He denied that there was any sinister significance whether the product was called "tetraethyl lead" or "lead tetraethyl." The name "ethyl" had been chosen from a publicity point of view, and was a trade name.

## Chemical and Dyestuffs Traders

### Action on the Calcium Biphosphate Decision

IN a circular to members, the British Chemical and Dyestuffs Traders Association state :—The Tribunal under Section I (5) of Part I of the Safeguarding of Industries Act, 1921, have decided that this product [calcium biphosphate, baking powder quality] shall be included in the list of articles chargeable with duty. The official notice of the Tribunal's decision omits to state on what grounds it is considered to be a "fine chemical"; it does not even state it is dutiable "because it is considered to be a fine chemical." Under the Act there is no provision for appeal against such a decision given in such a peculiar manner. We have asked Customs for a definition of "baking powder quality." The Council are alive to the new position which may arise as to the proper limits of the term "fine chemical," and are taking all possible steps to stop this first move to class a wide range of "heavy" chemicals as "fine chemicals" for the purpose of this Act. It is probable that a further and important statement will be issued in the near future after the Council have fully examined the position.

## Chemical Matters in Parliament

### Phosgene Gas: Storage and Use

In reply to Mr. Thurtle (House of Commons, June 6), Sir L. Worthington-Evans stated that certain small quantities of phosgene and similar compounds were kept by the Army for use in research and experimental work.

Lieut.-Commander Kenworthy asked the Home Secretary what regulations were in force for preventing the storage of poisonous gas near large centres of population and what steps were taken to prevent their accidental release; if his attention had been drawn to the disaster at Hamburg; whether he was satisfied that the regulations in this country were sufficient to avoid such danger, and whether the police had a supply of gas masks for use in the event of such emergency?

Replying, Sir V. Henderson stated that there were no such Regulations in force in this country, and the considerable use which was made of phosgene and other poisonous gases in various industrial processes necessitated the storage of these gases in the factories concerned. The precise cause of the Hamburg disaster was not clear, but it was noteworthy that the container at Hamburg appeared to have been of much greater capacity, and therefore liable to far greater stress than the containers generally in use in this country. The chief safeguard against accidental release was that the containers should be of adequate strength, and the inquiries that had been made on this point indicated that the containers in use here had a wide margin of safety and that the position generally was satisfactory. An inquiry, however, into the storage of such gases was at present being carried out by a Committee of the Scientific and Industrial Research Department, and it would be necessary to review the situation in the light of their findings. The supply of gas masks to the police would be considered, but on present information this hardly appeared to be necessary.

### Oil Import Duty

Lieut.-Commander Kenworthy asked the Chancellor of the Exchequer (House of Commons, June 7) whether he had received a resolution, passed unanimously by the National Federation of Paint, Colour, and Varnish Manufacturers of the United Kingdom, protesting against the turpentine duties as imposing burdens on the paint and varnish industry; if he was aware that turpentine was a vegetable spirit which cost three times as much to produce as white spirit and could only be considered a competitor of white spirit in that its use at considerably increased cost resulted in the production of paint and varnish of higher quality; that turpentine could not in any circumstances be produced in Great Britain, and was incapable of use in internal combustion engines; and whether, in the circumstances, he would favourably consider exempting turpentine used in the manufacture of paint and varnish from duty.

Mr. Churchill, in reply, stated that a resolution such as was mentioned had been received, but as regarded the fourth part of the question he regretted he could not see his way to give the exemption suggested. In a supplementary question, Lieut.-Commander Kenworthy asked whether, in view of the rebate in the case of paraffin, did he not think the time had come to exempt this other productive material used by manufacturers in very important trades? Mr. Churchill suggested that the point should be raised in discussions on the Petrol Duty.

### Appointments Vacant

ASSISTANT GENERAL MANAGER for the Chemical and Metallurgical Corporation, Ltd.—The Managing Director, The Chemical and Metallurgical Corporation, Astmoor Works, Runcorn. Further details of this post will be found in our advertisement columns, page xx.

LEATHER RESEARCH CHEMIST for the New Zealand Tanners' Research Association.—The High Commissioner for New Zealand, 415, Strand, London, W.C.2. June 30.

UNIVERSITY READERSHIP in Chemistry tenable at East London College, University of London.—The Academic Registrar, University of London, South Kensington, London, S.W.7, June 21.

DEMONSTRATOR in Chemistry at St. Bartholomew's Medical College.—The Dean, St. Bartholomew's Hospital Medical College, London, E.C.1. June 20.

# From Week to Week

SIR ERNEST RUTHERFORD has been awarded the Albert Medal of the Royal Society of Arts for the current year.

SIR WILLIAM BRAGG, as president, will deliver an address on "Craftsmanship and Science" at the meeting of the British Association at Glasgow, September 5 to 12.

AN ISSUE IS BEING MADE at par this week-end of 36,000 7½ per cent. cumulative participating preference shares of £1 and 256,000 ordinary shares of 5s. of Fairy Dyes, Ltd.

SIR WILLIAM J. POPE has been elected Prime Warden of the Goldsmiths' Company in succession to Sir John Mullens. Other chemists who have been Prime Wardens of the Company are Sir Frederick Abel and Mr. C. T. Heycock.

SIR ALFRED MOND, President of the British Science Guild, will take the chair at the annual general meeting of the Guild, to be held at the Hall of the Royal Society of Arts, John Street, Adelphi, London, on Thursday, June 21, at 5 p.m.

MR. P. N. WILLIAMS, bio-chemist to Lever Brothers, lectured on Wednesday evening to the Middlesbrough and District Grocers Association on the subject of "Foods and the Grocer," laying particular stress on the value of vitamins in food.

AN ORDER for over 4,000,000 tons of Welsh coal has been placed by a new coal distillation company which, it is reported, has been formed to take advantage of the preference given by the Budget to home manufactured motor spirit. The coal is to be delivered at the rate of 750 tons a day.

THE ESCAPE OF CHEMICALS from one of the works in the neighbourhood is supposed to be the cause of the death of large numbers of dead fish which have been found floating on the Tees near Middleton-in-Teesdale. An inquiry is being instituted by the Tees Fishery Board. The damage is believed to have been done by sulphuric acid.

BY FAILING TO TAKE ACTION on the Muscle Shoals Bill during the first ten days (Sundays excluded) after the adjournment of Congress, President Coolidge has administered the "pocket veto" to the project for the Government operation of the great hydro-electric power and nitrate manufacturing plant at Muscle Shoals, Tennessee River, Alabama.

UPWARDS OF 300 EXHIBITS from the leading engineering concerns in the country who specialise in the production of plant, appliances, and materials directly associated with the industrial treatment and utilisation of fuel in its various forms, are to be brought together at the permanent fuel economy exhibition which is to be opened on Wednesday, September 26, in premises at Wilton Road, London, S.W.

OWING TO THE PURCHASE of a controlling interest in the Dunstable Portland Cement Co. by the Associated Anglo-Atlantic Corporation and the British Cement Products and Finance Co., Sir G. Fell, the Earl of Dunmore, and Messrs. G. V. Maxted and P. J. Neate have resigned from the board. Mr. O. J. S. Piper and Mr. H. S. Sugden, of the Ship Canal Portland Cement Manufacturers, and Mr. A. J. Chapman, of the British Cement Products and Finance Co., have been appointed to the board.

STANDFAST DYES, LTD., of Caton Road, Lancaster, were prosecuted by the Lune Board of Fishery Conservators on Monday for causing to flow into Newton Beck matter which was injurious to fish life. Samples of water taken from above the works were found, on analysis, to contain alkali and chloride of lime to such an extent that when yearling trout were put into it they died within 15 minutes. After a protracted hearing the Bench imposed a fine of 20s. on one summons and 5s. in each of three others, £40 costs being allowed.

THE FOURTH ADVERTISING CONVENTION opened at Birmingham on Tuesday, when delegates numbering about 700 were welcomed by the Lord Mayor. Mr. C. A. McCurdy, president of the Association, read a message from the Prince of Wales, in which it was stated that "By bringing into play those new and scientific methods of marketing which modern conditions demand we shall go far to retain that pre-eminent position in commerce which has been won for us by the efforts and enterprise of previous generations." Among the speakers was Sir Ernest Benn.

AT THE ORDINARY SCIENTIFIC MEETING of the Chemical Society at Burlington House on Thursday, June 21, at 5.30 p.m., the following papers will be read:—"Acid and salt effects in catalysed reactions. Part XV. The catalytic activity of hydrochloric acid in the hydrolysis of ethyl acetate," by H. M. Dawson and W. Lowson; "The chemistry of the three carbon system. Part XVIII. Quantitative investigations on the $\alpha\beta$-$\beta\gamma$ change in unsaturated acids; observations on the reduction of sorbic acid, and a new synthesis of pyroterebic acid," by A. A. Goldberg and R. P. Linstead; "The influence of structure on the solubilities of ethers. Part I. Aliphatic ethers," by G. M. Bennett and W. G. Philip; "The influence of structure on the solubilities of ethers. Part II. Some cyclic ethers," by G. M. Bennett and W. G. Philip; and "The photochemical decomposition of glyoxal vapour," by R. G. W. Norrish and J. G. A. Griffiths.

FOUR MEN WERE INJURED on June 8 as the result of the collapse of scaffolding at a new chemical works which is being equipped at Cockerton, Darlington.

AN EXPLOSION OCCURRED in a filling shed at the fireworks factory of C. T. Brock and Co., at Sutton, on Monday, and two men and two women were injured.

A SOAP FACTORY IN FULL PRODUCTION, 20 miles from London, with modern plant, having a present output of over 35 tons per week, is advertised for sale on p. xix.

THE SPANISH GOVERNMENT is said to be considering the establishment of a consortium to regulate the exploitation and price of resin and to set up a syndicate of industries connected with the production thereof.

SIR HARRY MCGOWAN, owing to unforeseen circumstances, will be unable to accompany the mission of British business men to Australia, and Sir Arthur Duckham has undertaken to serve as head of the mission.

AT A DINNER tendered by his colleagues at McGill University, Dr. R. F. Ruttan, a former president of the Society of Chemical Industry, who is retiring from his position as director of chemistry, was presented with his portrait, by Alphonse Jongers.

THE MINISTRY OF LABOUR has intervened with a view to securing a settlement of the dyers' wages dispute. In consequence of this the National Union of Textile Workers instructed its members to remain at work, although their notices expired on Wednesday evening.

MR. T. MILLER-JONES, managing director of Thomas Hill-Jones, Ltd., charcoal manufacturers, of Bow, has been elected President for the ensuing year of the General East End Tradesmen's Association. Mr. Miller-Jones is a popular member of the Association and takes a keen interest in local matters.

IN A REPORT of the fire at the vitriol works of the United Alkali Co., Ltd., the *Widnes Weekly News* states that one of the chambers built of steel and lined with lead in the same way as the wooden chambers remained standing, and the comment is made that "this, no doubt, will provide food for thought in the future construction of these plants."

IN CONNECTION with Mr. Santiago Sabioncello's offer, which expired at noon on June 6, to purchase shares in the Liverpool Nitrate Co., it is stated that shareholders (including William and John Lockett, Ltd.) owning 177,095 shares out of a total of 350,000 shares have accepted the offer. It may be recalled that the offer was to buy the shares at 22s. each.

THE FIRST UNIT FOR Continuous Coal Carbonisation, Ltd., capable of carbonising 50 to 60 tons of coal per day, and forming part of the complete plant to carbonise 1,000 tons daily, is being installed at Erith. The directors anticipate that this unit, together with the complete condensing and distillation plant for dealing with by-products, will be in operation by the contract date at the end of July.

A SUGGESTION HAS BEEN MADE that the administrative area of Northwich should be extended to include within the urban district Winnington, Rudheath, and Lostock Gralam. The works of Imperial Chemical Industries, Ltd., are just outside the urban area at both ends of the town, and it is felt that it would be a measure of justice if these were rated for urban purposes, as the majority of the workers live in the urban district and enjoy the amenities provided by the urban ratepayers.

RECENT WILLS INCLUDE: Mr. W. Irwin, of Cockermouth, managing director of the West Cumberland By-Products Co., £50,462.—Mr. J. P. Walton, analytical chemist, of Port Talbot, £3,359 (net personalty £1,708). Probate has been granted to his sons, Mr. J. S. Walton and Mr. R. N. P. Walton, metallurgical chemists.—Sir R. A. Robinson, of Whitby, for some years a director of Price's Patent Candle Co. and a director of other companies connected with chemical industry, £23,215 (net personalty, £21,529).

ARTIFICIAL SILK NEWS.—A new artificial silk combine, Scottish Amalgamated Silks, Ltd., was registered in Edinburgh on Tuesday, June 5, with a capital of £2,000,000. Several companies and works will be taken over, including Scottish Artificial Silks, Ltd., Dalmarnock Mills, Glasgow, and Argyll Works, Alexandria, Dumbartonshire.—It has recently been announced that the installation of machinery at the factory of the Cellulose Acetate Silk Co., Ltd., at Lancaster, is ahead of time, and that the company will be producing cellulose acetate on a large scale in a few weeks.

## Obituary

EDOUARD SANDOZ-DAVID, joint founder of the Chemische Fabrik vormal Sandoz (in Basle), on January 9, aged 74, at Lausanne.

DR. E. FROMM, director of the Medico-Chemical Institute of the University of Vienna, recently, aged 63. He was one of the prominent men in the German gas warfare organisation.

PROFESSOR R. LEPETIT, the Italian chemist, on March 27, aged 62. He worked out two syntheses of indigo, a synthesis of phenylglycine, the well-known bisulphite method for the preparation of 1-naphthol-4-sulphonic acid, the production of the pigment "Italian Green," etc. He was president of the Societa di Chimica Industriale.

# References to Current Literature

## British

CHEMICAL ENGINEERING.—The flow of fluids in pipes. E. S. L. Beale and P. Docksey. *J. Inst. Petroleum Tech.*, April, pp. 236–262.

COLLOIDS.—The preparation of colloidal lead. S. W. Pennycuick and A. E. Scott. *Chem. Engineering and Mining Review* (Australia), April 5, pp. 247–249. Details are given of the preparation of samples of colloidal lead which have been used in Adelaide in the treatment of cancer in the last 12 months.

FIRE PREVENTION.—Causes of fire in the petroleum industry with methods of prevention. C. Dalley. *J. Inst. Petroleum Tech.*, April, pp. 154–173.

GENERAL.—Odour and constitution among the mustard oils. III. The joint influence of halogen, methyl, and nitro groups. G. M. Dyson. *Perfumery and Essential Oil Record*, May, pp. 171-174.

OPTICAL ACTIVITY.—Molecular dissymmetry dependent on restriction of rotation about a single bond. Optically active benzenesulphonyl- 8 - nitro - 1 - naphthylglycine. W. H. Mills and K. A. C. Elliott. *J. Chem. Soc.*, May, pp. 1291–1302.

ORGANIC.—Arylamine salts of the naphthalene-sulphonic acids. V. Acetylation of peri, Laurent, and Brönner acids and the arylamine salts of their acetyl derivatives. R. B. Forster, T. H. Hanson, and R. Watson.—VI. Salts of Koch acid, " H " acid, and chromotropic acid. R. B. Forster and D. H. Mosby. *J.S.C.I.*, June 1, pp. 155-157 T, 157-159 T.

The preparation of 4 : $4^1$ dinitrobenzil. F. D. Chattaway and E. A. Coulson. *J. Chem. Soc.*, May, pp. 1361-1364.

Action of cuprous hydride on diazonium salts. A combined Sandmeyer-Gattermann reaction. P. Neogi and A. K. Mitra. *J. Chem. Soc.*, May, pp. 1332–1333. Treatment of a diazonium salt, at 0° C., in the presence of a halogen acid, with cuprous hydride (CuH) gives rise to the production of the aryl halide, with some hydrocarbon as by-product.

RUBBER.—Effect of various carbons in rubber. E. B. Spear and R. L. Moore. *Rubber Age*, June, pp. 123-125.

Chemical unsaturation of rubbers vulcanised with polynitro compounds and benzoyl peroxide, and its possible bearing on vulcanisation. H. L. Fisher and A. E. Gray. *Rubber Age*, June, pp. 144-145.

TRANSMUTATION—Experiments on transmutation. J. A. N. Friend. *J. Chem. Soc.*, May, pp. 1321–1324. Exposure of various substances to various rays from radioactive materials failed to give evidence for transmutation.

## German

ANALYSIS.—A titrimetric determination of potassium. O. Pfundt. *Zeitschrift cnalytische Chem.*, Vol. 73, Part 12, pp. 439–440.

Application of centrifuges to quantitative determinations. A. Gunder. *Zeitschrift analytische Chem.*, Vol. 73, Part 12, pp. 441–444.

The determination of cresols. II. K. K. Järvinen. *Zeitschrift analytische Chem.*, Vol. 73, Part 12, pp. 446–451.

The gravimetric determination of small quantities of thallium. J. Proszt. *Zeitschrift analytische Chem.*, Vol. 73, Part 12, pp. 401–404.

APPARATUS.—A stand for electrolysis with a rotating electrode. A. Gunder. *Zeitschrift analytische Chem.*, Vol. 73, Part 12, pp. 444–445.

CATALYSIS.—Recent investigations in the domain of heterogeneous catalysis. W. Frankenburger. *Zeitschrift angewandte Chem.*, May 26, pp. 523–531 ; June 2, pp. 561–567.

COAL CARBONISATION.—The " gas benzine " of the carbonisation plant of the Gelsenkirchener Bergwerks-A.G. F. Krollpfeiffer and H. Seebaum. *Journal praktische Chem.*, Vol. 119, Parts 5 and 6, pp. 131–156. An investigation of " gas benzine," the liquid obtained from coal gas after separation of the tar, by washing with oil. The following substances were isolated : *n*-pentane, 2-methylpentane, and *n*-hexane ; 2 : 3-pentene, 2-methyl-2 : 3-butene, and 2-methyl-2 : 3-pentene ; cyclopentadiene ; carbon disulphide ; benzene ; acetone ; and methyl ethyl ketone.

GENERAL.—Advances in the utilisation of the by-products of saccharin in 1927. W. Herzog. *Die Metallbörse*, April 25, p. 903 ; May 9, pp. 1015–1016 ; May 23, pp. 1126–1127 ; May 30, pp. 1183–1184 ; June 6, pp. 1238–1239. Deals with various uses of *p*-toluenesulphonamide, chloramin, esters of *p*-toluenesulphonic acid, and *p*-toluenesulphochloride, etc., in the production of intermediates, dyestuffs, the immunisation of cotton, the treatment of resins and rubber, the production of plastic masses, etc.

Physical methods in the chemical laboratory. IV The significance of spectroscopy for chemical research. I. E. Rabinowitsch. *Zeitschrift angewandte Chem.*, June 2, pp. 555–561.

ORGANIC.—The catalytic reduction of mandelic acids. K. W. Rosenmund and H. Schindler. *Archiv der Pharmazie*, May, pp. 281–283.

The esters of bromoformic acid. K. W. Rosenmund and H. Döring. *Archiv der Pharmazie*, May, pp. 277–280.

## Miscellaneous

ANALYSIS.—A new combined method of determining insoluble and soluble volatile fatty acids in butter and in fats. E. Tchétcheroff. *Bulletin Société Chim. Belgique*, April, pp. 153–163 (in French).

The analysis of sodium sulphate used in the manufacture of glass. The direct determination of $Na_2SO_4$. A. Besombe. *Bulletin Société Chim. Belgique*, April, pp. 164–165 (in French).

APPARATUS.—Féry's refracto-dispersometer. C. Chéneveau and C. Vaurabourg. *Chimie et Industrie*, May, pp. 787–792 (in French).

CELLULOSE ACETATE.—Researches on cellulose acetate and its solution. III. Stabiliser for cellulose acetate. Y. Tanaka and K. Atsuki. Calcium naphthenate is found to be the most effective stabiliser.—IV. On the acetylation of cellulose. K. Atsuki and R. Shinoda.—V. The relation between temperature and time of ripening to produce a cellulose acetate of given viscosity. K. Atsuki and R. Shinoda. *J. Soc. Chem. Ind. Japan* (supplemental binding), May, pp. 97B, 97–98B, and 98–100B (in English).

GENERAL.—Experiments on the methylation of starch. L. Schmidt and M. Zentner. *Monatshefte für Chemie*, Vol. 49, Parts 1-2, pp. 111–117 (in German).

" Anti-knocking " agents. J. H. Frydlender. *Revue Produits Chimiques*, May 31, pp. 361–364 (in French). Deals with the present state of knowledge, the substances described being lead tetraethyl, iron and nickel carbonyls, and thallium and its compounds.

Casein : Acid casein and rennet casein, and the transformation of acid casein to rennet casein. C. Porcher. *Chimie et Industrie*, April, pp. 589–598 ; May, pp. 809-816 (in French).

ORGANIC.—Contribution to the study of cyclopentane compounds. A new preparation of 1 : 2-dimethyl-cyclopentane. G. Chavanne and L. de Vogel. *Bulletin Société Chim. Belgique*, April, pp. 141–152 (in French).

Studies on " Bios." B. Suzuki and Y. Hamamura. *Proceedings Imperial Acad. Japan*, April, pp. 158–161 (in English).

On the separation of glycerides. IV. Oil of silkworm pupa. B. Suzuki and Y. Yokoyama.—V. Cod liver oil. B. Suzuki and Y. Masuda. *Proceedings Imperial Acad. Japan*, April, pp. 161–164, 165-168 (in English). Oil of silkworm pupa was separated into 8 (brominated) glycerides, and cod liver oil into 9.

SOAPS.—Studies on soap solutions. VI. Compositions of substances adsorbed by various adsorbents. J. Mikumo. *J. Soc. Chem. Ind. Japan* (supplemental binding), May, pp. 95–97B (in English).

TEXTILES.—The effect of printing, discharging, and stripping agents upon muslin. IV. On the destruction of wool by the hydrosulphite groups and the theory of its destruction. H. Udaka. *J. Soc. Chem. Ind. Japan* (supplemental binding), May, pp. 107–108B (in English).

# Patent Literature

*The following information is prepared from published Patent Specifications and from the Illustrated Official Journal (Patents) by permission of the Controller to H.M. Stationery Office. Printed copies of full Patent Specifications accepted may be obtained from the Patent Office, 25, Southampton Buildings, London, W.C.2, at 1s. each.*

### Abstracts of Complete Specifications

289,980. VAT DYESTUFFS, MANUFACTURE OF. J. Y. Johnson, London. From I.G. Farbenindustrie Akt.-Ges., Frankfort-on-Main, Germany. Application dates, February 14, September 12 and September 29, 1927.

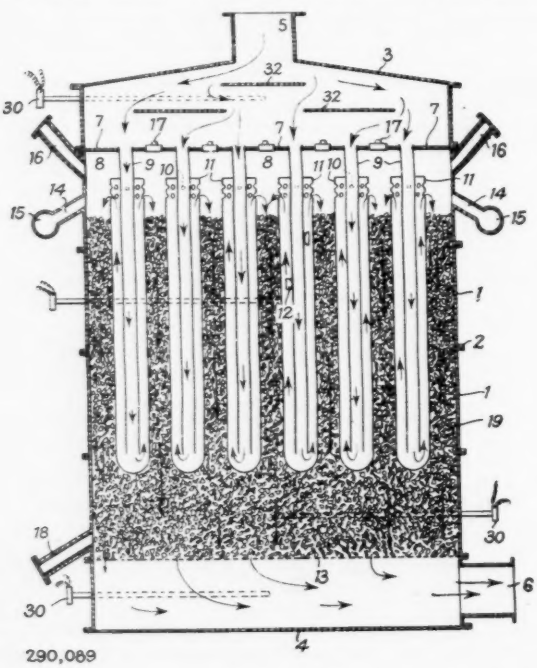
A nitrobenzanthrone obtained as described in Specification No. 12,518, 1906, is reduced and the amino benzanthrone fused with caustic alkali under mild conditions. Green dyestuffs are obtained which are converted by oxidising agents into brown vat dyestuffs. The latter may also be produced on the fibre by treating the green dyeings with hypochlorite. Several examples are given.

290,045. AMMONIUM CHLORIDE CRYSTALS, MANUFACTURE OF. J. W. Moore, Kinderton House, Weston Road, Runcorn, W. G. Polack, Glamis House, Chapel Lane, Frodsham, Cheshire, and Castner-Kellner Alkali Co., Ltd., Western Point, Runcorn, Cheshire. Application date, May 18, 1927. Addition to 273,093.

Specification No. 273,093 (see THE CHEMICAL AGE, Vol. XVII, p. 133) describes the preparation of ammonium chloride crystals by the interaction of synthetic ammonia and hydrochloride acid gas at a high temperature and at such velocity that the product is in a tough, fibrous form similar to that produced by sublimation using external heating. In this invention, gases saturated with moisture at atmospheric temperature and pressure are used, and the temperature of the reaction (230°—240° C.) prevents condensation of the moisture with ammonium chloride.

290,089. CATALYTICALLY REOXIDISING SULPHUR DIOXIDE, APPARATUS FOR. H. G. C. Fairweather, London. From The Selden Co., 339, 2nd Avenue, Pittsburg, Pa., U.S.A. Application date, September 14, 1927.

The reaction gases enter through a pipe 5 and pass over baffles 32 to concentric tubes 9, 11 as shown by the arrows.




290,089

The gases emerge through openings at the top of these tubes, and then pass downwards through the catalyst 19 which is supported on a sieve 13. The catalyst may be introduced through openings 16, and removed through an outlet 18. The circulation of the cold gases through the heat exchanging tubes prevents excessive temperature in the catalyst. Further quantities of cold gas can be added through pipes 14 to prevent overheating at the surface of the catalyst. A number of modifications of this apparatus are described.

290,075. FERTILISERS, MANUFACTURE OF. D. Tyrer, Stockton-on-Tees Chemical Works, Ltd., Bowesfield Lane, Stockton-on-Tees, Durham. Application date, August 2, 1927.

When powdered mineral rock phosphate is heated under reducing conditions with potassium sulphate or bisulphate, the product contains water-soluble potash and phosphate, and water-insoluble but citric-acid-soluble phosphate. This fertiliser contains also sulphides, which must be removed. In this invention, the reaction product is treated with an acid or acid salt, the acid radicle of which has fertilising properties. Phosphoric acid obtained by the action of sulphuric acid on phosphate rock may be used for this purpose, and the sulphuretted hydrogen evolved may be employed for making sulphuric acid.

290,316. CATALYTIC OXIDATION OF SULPHUR DIOXIDE. H. G. C. Fairweather, London. From The Selden Co., 339, Second Avenue, Pittsburg, Pennsylvania, U.S.A. Application date, January 4, 1927.

A gaseous mixture containing sulphur dioxide and oxygen is passed at an elevated temperature over a contact mass consisting of or containing a catalytically active zeolite which is the reaction product of two classes of chemical compounds, *i.e.*, either silicates and metallates or silicates and metal salts, in or with which there is chemically combined in non-exchangeable form at least one catalytically active component in the form of a metal of the fifth or sixth periodic groups or an oxide thereof. The use of zeolites containing pentavalent vanadium as part of the non-exchangeable nucleus of the base exchange body itself without other catalytic components is excluded from the scope of the invention. The main object is to avoid the disadvantages inherent in the use of platinum catalysts, *viz.*, their high cost and their sensitiveness to catalytic poisoning. Nine examples are given of methods of carrying out the invention.

290,319. ALDEHYDES, PRODUCTION OF, FROM DICARBOXYLIC ACIDS. J. Y. Johnson, London. From I. G. Farbenindustrie Akt.-Ges., Frankfort-on-Main, Germany. Application date, January 7, 1927.

The dicarboxylic acids or their anhydrides are subjected to the action of reducing gases (hydrogen, carbon monoxide, coal gas, producer gas, etc.), at high temperatures (170–400° C.) in presence of one or more hydrogenation catalysts, with or without the addition of activating substances. Examples are given of the production of benzaldehyde from phthalic anhydride and of propionaldehyde from succinic anhydride or maleic anhydride.

290,377. NEW DEPOLYMERIZATION PRODUCTS FROM CARBOHYDRATES OF HIGH MOLECULAR WEIGHT, MANUFACTURE OF. W. Carpmael, London. From I. G. Farbenindustrie Akt.-Ges., Frankfort-on-Main, Germany. Application date, February 15, 1927.

Various types of starch and cellulose are boiled under reflux or otherwise treated with ethylene glycol or monochlorhydrin or mixtures thereof until the required degree of degradation is attained. The glycol or chlorhydrin is subsequently distilled off *in vacuo* at comparatively low temperatures.

290,408. VAT DYESTUFFS OF THE ANTHRAQUINONE SERIES. PRODUCTION OF. J. Y. Johnson, London. From I. G. Farbenindustrie Akt.-Ges., Frankfort-on-Main, Germany. Application date, March 24, 1927.

Dyestuffs yielding fast strong yellow shades from a warm hydrosulphite vat are obtained by treating bis-(2$^1$-carboxyanthraquinonyl-1$^1$)-dimercapto-2:6- or 2:7-anthraquinones with dehydrating agents. They are capable of being combined with the majority of the dyestuffs known under the registered trade mark "Indanthrene." Specified dehydrating agents are sulphuric acid and benzotrichloride.

NOTE.—Abstracts of the following specifications, which are now accepted, appeared in THE CHEMICAL AGE when they became open to inspection under the International Convention :— 261,029 and 264,466 (I. G. Farbenindustrie Akt.-Ges.) relating to urea and its derivatives and formaldehyde, see Vol. XVI, pp. 70 and 317 respectively ; 270,764 (Elektrizitätswerke Lonza) relating to manufacture of croton aldehyde, see Vol. XVII, p. 86 ; 274,023 (Soc. d'Etudes Minieres et Industrielles) relating to manufacture of ammonia, see Vol. XVII, p. 242 ; 274,904 (I. G. Farbenindustrie Akt.-Ges.) relating to catalytic gas reactions, see Vol. XVII, p. 311 ; 277,938 (Haynes), relating to manufacture of carbon dioxide, see Vol. XVII, p. 495 ; 278, 672 (F. Hoffmann-La Roche and Co. Akt.-Ges.) relating to manufacture of alkyl and aralkyl derivatives of diphenolisatines, see Vol. XVII, p. 536 ; 281, 281 (Bensa) relating to manufacture of chloroperylene quinones, see Vol. XVIII, p. 103 ; 284,199 (Boedecker) relating to preparation of alkyl ethers of protocatechuic aldehyde, see Vol. XVIII, p. 305.

## International Specifications not yet Accepted

288,307. DYES AND INSECTICIDES. I.G. Farbenindustrie Akt.-Ges., Frankfort-on-Main, Germany. International Convention date, April 6, 1927.

Compounds applicable as dyes and insecticides are obtained by coupling a diazo, diazoazo, or tetrazo compound containing one or more substituted or unsubstituted alkyloxy, aralkyloxy, or aryloxy groups in *o*-positior to one or more azo or diazo groups with a coupling component in presence of a water-soluble complex copper-nitrogen compound. Thus, 2-aminoanisol may be coupled with 5: $5^1$-dihydroxy-2 : $2^1$-dinaphthylamine-7 : $7^1$-disulphonic acid in presence of tetrammine copper sulphate, Cu $(NH_3)_4$ $SO_4.H_2O$. A number of other examples are given.

288,308. PHENOL. I.G. Farbenindustrie Akt.-Ges., Frankfort-on-Main, Germany. International Convention date, April 6, 1927.

Chlorbenzene is boiled with water and caustic soda lye, and the vapour passed through heated tubes containing active silica gel. The vapour contains phenol and hydrochloric acid, and is led back tothe still to co mbine with the caustic soda lye.

288,330-1. PHOSPHATES. Soc. Anon. des Charbons Actifs E. Urbain, 134, Boulevard Haussmann, Paris. International Convention dates, April 8 and 9, 1927.

288,330. Potassium chloride is heated with ortho-, pyro-, or metaphosphoric acid to obtain potassium metaphosphate and hydrochloric acid. The former can be hydrated to obtain di-potassium pyrophosphate or mono-potassium orthophosphate which can be treated with ammonia to obtain fertilisers.

288,331. The hydrated products referred to in 288,330 (above) are treated with ammonia, urea, cyanamide etc. to obtain complex fertilisers such as PO(OK) $(ONH_4)$ $NH_2$.

288,546. STARCH. Corn Products Co., Ltd., London (Assignees of R. O. McCoy, Home Avenue, Berwyn, Illinois, U.S.A.). International Convention date, April 11, 1927.

Disintegrated maize or other starch-bearing material is subjected in water to separating operations yielding a mixture of starch and gluten, the mixture being tabled, and the effluent from the tabling, with the gluten it contains, being used in subsequent separations. The table effluent is used for coarse slop separation, and water from washing the starch after tabling is used for fine slop and germ separations. Part of the table effluent is used for steeping maize, etc., after removal of its gluten. A preferred arrangement of plant is described and illustrated.

288,549. CARBOXYLIC ACID ANHYDRIDES. Consortium für Elektrochemische Industrie Ges., 20, Zielstattstrasse, Munich, Germany. International Convention date, April 11, 1927.

A vinyl ester is caused to react with a carboxylic acid, preferably by heating the reagents together in presence of a catalyst such as sulphuric, phosphoric, benzenesulphonic, sulphoacetic or other acid, an acid salt, or a neutral salt such as mercury sulphate. Any acetaldehyde formed may be separated by distillation. Thus acetic anyhdride is obtained on fractional distillation of the product resulting from boiling together vinyl acetate, acetic acid, and a small quantity of sulphuric acid. Mixed anhydrides may also be prepared.

288,554. DYES. I. G. Farbenindustrie Akt.-Ges., Frankfort on-Main, Germany. International Convention date April 11, 1927.

By treatment with a ring-closing agent 3 : 5 : 6-trimethylbenzene-1-thioglycollic acid, or a 2-substituted carboxy, cyano, or carboxylic acid amino derivative thereof, is converted into the corresponding hydroxythionaphthene, which on oxidation yields 4 : 6 : 7 : $4^1$ : $6^1$ : $7^1$ -hexamethyl - bis - thionaphthene indigo. Vat dyestuffs may be obtained by condensation of 4 : 6 : 7-trimethylhydroxythionaphthene or its active 2-derivatives with the usual indigoid components.

288,555. SYNTHETIC DRUGS. I. G. Farbenindustrie Akt.-Ges., Frankfort-on-Main, Germany. International Convention date, April 11, 1927.

Aminoalkylethers of phenols are prepared by treating phenols containing an unsaturated alkyl group in the 4-position, and in which the 1- and 6- positions are occupied, with a dialkylaminoalkyl halide in presence of an alkaline agent. Alternatively the phenols may be treated with alkylene dihalides, the monohalogenated product being then combined with an alkylamine.

288,571. PYRIDINE DERIVATIVES. Schering-Kahlbaum Akt.-Ges., 170, Müllerstrasse, Berlin. International Convention date, April 12, 1927.

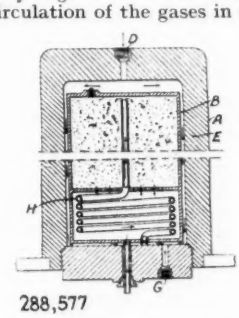
2-Aminopyridine is treated successively with quantities of an iodizing agent, such as iodine or iodine chloride, which separately are insufficient to effect complete conversion into the addition compounds, and the said compound is decomposed with alkali after each addition, in order to produce 5-iodo-2-aminopyridine.

288,572. DIAZO COMPOUNDS ; DYES. Compagnie Nationale de Matières Colorantes et Manufactures de Produits Chimiques du Nord Réunies Etablissements Kuhlmann, 11, Rue de la Baume, Paris. International Convention date, April 12, 1927.

4-Chlorobenzenediazooxide is obtained by treating diazotised 2-nitro-4-chloraniline with alkalies. It couples with azo components in absence of free alkali, and the resulting dyestuffs yield purer shades than are obtained when free alkali is present.

288,577. CATALYTIC APPARATUS. Soc. l'Air Liquide, Soc. Anon. pour l'Etude et l'Exploitation des Procedes G. Claude, 48, Rue St. Lazare, Paris. (Assignees of A. T. Larson, Wilmington, Delaware, U.S.A.) International Convention date, April 12, 1927.

Exothermic catalytic gaseous reactions are carried out under pressure with recirculation of the gases in an apparatus com-



288,577

prising an outer pressure-resisting vessel A and an inner vessel B containing the catalyst. The fresh gases enter at D, circulate in the space between the vessels, and after admixture with recirculated gases entering at G, pass into the catalyst space. A heat exchanger may be provided in the vessel B.

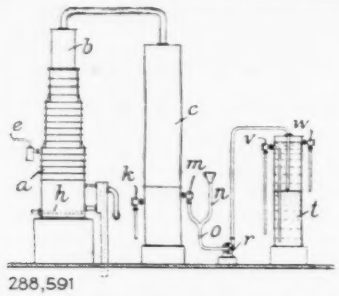
288,584. SOAPS. A Lettermann, Elberfeld, Germany. International Convention date, April 12, 1927.

Soap masses for use in making soap powders are obtained direct from a fatty oil by intimate admixture with the alkaline solution and with the soda-ash, potash, or other water-absorbing substance, and allowing the mixture to stand.

288,591. PURIFYING OILS. C. Still [Firm of], 4, Bismarckplatz, Recklinghausen, Germany. International Convention date, April 13, 1927.

In the purification of tar oils benzol fractions are treated with caustic alkali to remove sulphur directly after their production, before any oxidation can occur. Preheated wash oil charged with benzol enters a steam-heated column *a* by a

pipe *e*, and the gas passes through a dephlegmator *b* to a condenser *c* having means *k* for withdrawing water at the bottom. Light oil passes out at *m* and is mixed continuously in a pipe *o*




288,591

with caustic soda solution supplied through a pipe *n*. The mixture is then delivered to a centrifugal pump *r* and a separator *t* from which benzol and caustic soda solution are drawn off.

LATEST NOTIFICATIONS.

291,347. Manufacture of diacidyl derivatives of the naphthalene and acenaphthene series. I.G. Farbenindustrie Akt.-Ges. May, 30, 1927.

291,433. Process for concentrating volatile aliphatic acids. Holzverkohlungs-Industrie Akt.-Ges. June 2, 1927.

291,434. Process for concentrating volatile aliphatic acids. Holzverkohlungs-Industrie Akt.-Ges. June 2, 1927.

291,435. Process for removing dissolved silicic acids from liquids, especially water for domestic or industrial uses. Dr. A. Rosenheim. June 4, 1927.

291,393. Process for the manufacture of emulsifying and stabilizing agents, and dispersions obtained therewith. Naamlooze Vennootschap de Bataafsche Petroleum Maatschappij, and Dr. H. Limburg. June 1, 1927.

291,379. Process of sweetening hydrocarbon distillates. T. B. Kimball. May 31, 1927.

291,355. Process for the manufacture of a zinc pigment by means of barium hydrate. C. Deguide. May 30, 1927.

291,360. Manufacture of cellulose esters. I.G. Farbenindustrie Akt.-Ges. May 30, 1927

291,361. Manufacture of dyestuffs. I.G. Farbenindustrie Akt.-Ges. May 30, 1927.

291,382. Process of and apparatus for producing carbon disulphide. I.G. Farbenindustrie Akt.-Ges. May 31, 1927.

291,413. Manufacture of lead electrodes for accumulators. I.G. Farbenindustrie Akt.-Ges. June 1, 1927.

## Specifications Accepted with Date of Application

262,101. Monocarboxylic acids, Manufacture and production of. I.G. Farbenindustrie Akt.-Ges. November 27, 1925.

263,826. Dyestuffs, Manufacture of. Society of Chemical Industry in Basle. December 24, 1925.

272,469. Anthraquinone derivatives, Production of I.G. Farbenindustrie Akt.-Ges. June 8, 1926.

277,382. Sulphuric acid, Process of producing sulphur-dioxide-containing gas currents for the manufacture of. R. Von Zelewski. September 13, 1926.

277,702. Aluminium alloys. H. Schorn. September 18, 1926.

280,226. Soluble complete manure. Soc. Anon. Union Agricole de Jodoigne. November 4, 1926.

282,330. Mixed manures, Method of producing. F. G. Liljenroth. December 14, 1926.

283,119. Methylene chloride, Manufacture of. I.G. Farbenindustrie Akt.-Ges. January 3, 1927.

283,148. Fused silica, Manufacture of. Quarts and Silice. January 5, 1927.

283,908. Mixed manures, Method of producing. F. G. Liljenroth. January 20, 1927. Addition to 282,330 above.

285,004. Producer gas and water gas, Process and apparatus for the manufacture of. Humphreys and Glasgow, Ltd. February 8, 1927.

289,037. 2-Oxynaphthalene-3-carboxylic acid amide, Manufacture of derivatives of. I.G. Farbenindustrie Akt.-Ges. April 22, 1927.

291,131. Benzanthrone derivatives, Process for the production of. J. Y. Johnson. (*I.G. Farbenindustrie Akt.-Ges.*) February 21, 1927.

291,137. Liquid hydrocarbons of low boiling point, Manufacture and production of, from olefines. J. Y. Johnson. (*I.G. Farbenindustrie Akt.-Ges.*) February 22, 1927.

291,146. Yeast, Manufacture of. J. Y. Johnson (*H. Bücher*). February 24, 1927.

291,186. Olefines, Process for separating and recovering, from gases containing same. Synthetic Ammonia and Nitrates, Ltd., and G. F. Hoorsley. March 30, 1927.

291,213. Filtration of liquids. J. Coulthard. May 11, 1927.

291,219. Aluminium, Process for production of, in electric furnaces. V. Verney and Soc. Italiana di Elettrochimica. May 19, 1927.

291,244. Hydrogen, Production of, from methane hydrocarbons. J. Y. Johnson. (*I.G. Farbenindustrie Akt.-Ges.*). June 18, 1927.

291,245. Tanning agents, Manufacture and production of. J. Y. Johnson. (*I.G. Farbenindustrie Akt.-Ges.*) June 18, 1927.

291,249. Chromic acid, Manufacture of, in a solid form soluble in water. R. Schuster. June 23, 1927.

291,253. Exothermic gas reactions, Method of carrying out. H. Harter. July 4, 1927.

291,277. Recovery of absorbable substances from gaseous mixtures. E. C. R. Marks. (*Carbide and Carbon Chemical Co.*) October 22, 1927.

291,326. Monocarboxylic acids, Manufacture and production of. I.G. Farbenindustrie Akt.-Ges. November 22, 1926. Addition to 262,101 above.

284,272. Methylol ureas, Manufacture and production of. G. Walter. November 28, 1925.

## Applications for Patents

American Potash and Chemical Corporation. Manufacture of boric acid. 16,530. June 7. (United States, July 22, 1927.)

Carpmael, A., and I.G. Farbenindustrie Akt.-Ges. Manufacture of ortho-hydroxy-benzyl-amine arsinic acids, etc. 16,349. June 5.

Clark, A. S., and Washington Chemical Co., Ltd. Manufacture, etc., of product of magnesia. 16,353. June 5.

Clark, A. S., and Washington Chemical Co., Ltd. Manufacture of magnesia. 16,354. June 5.

Coley, H. E. Reduction of ores, etc. 16,263, 16,265. June 5.

Coley, H. E. Extraction of oil from shale. 16,566. June 7.

Coley, H. E. Manufacture of zinc. 16,683. June 8.

Coley, H. E. Manufacture of tin. 16,684. June 8.

Davidson, A. Dyeing cellulose esters, etc. 16,821. June 9.

Dreyfus, H. Manufacture of aliphatic compounds. 16,552, 16,553, 16,554. June 7.

Dreyfus, H. Treatment of cellulose materials, etc. 16,555. June 7.

Du Pont de Nemours and Co., E. I. Distillation of fermentation glycerine. 16,816. June 9. (United States, November 11, 1927.)

Henkel et Cie Ges. Manufacture of dry halogen calcium starch preparations. 16,346. June 5. (Germany, July 21, 1927.)

Hetherington and Sons, Ltd., J., and Welffens, E. J. Recovery of chemicals from waste solutions from artificial silk industries. 16,511. June 7.

I.G. Farbenindustrie Akt.-Ges. and Johnson, J. Y. Printing process. 16,285, 16,287. June 5.

I.G. Farbenindustrie Akt.-Ges. and Johnson, J. Y. Manufacture of lubricating oils. 16,286. June 5.

I.G. Farbenindustrie Akt.-Ges. and Johnson, J. Y. Manufacture of ortho-hydroxy-benzyl-amine arsinic acids, etc. 16,349. June 5.

I.G. Farbenindustrie Akt.-Ges. and Johnson, J. Y. Alkali phosphates and ammonium phosphates. 16,688. June 8.

I.G. Farbenindustrie Akt.-Ges. Producing azo-dyestuffs on fibre. 16,294. June 5. (Germany, June 13, 1927.)

I.G. Farbenindustrie Akt.-Ges. and Johnson, J. Y. Manufacture of divinyl, etc. 16,584. June 7. (Germany, June 7, 1927.)

I.G. Farbenindustrie Akt.-Ges. and Johnson, J. Y. Artificial rubber. 16,687. June 8. (Germany, June 13, 1927.)

I.G. Farbenindustrie Akt.-Ges. and Johnson, J. Y. Manufacture of derivatives of cork. 16,746. June 8. (Germany, June 8, 1927.)

Imperial Chemical Industries, Ltd. Production of carbon. 16,757. June 9.

Imperial Chemical Industries, Ltd., and Moore, J. W. Manufacture of bleaching powder. 16,758. June 9.

Imperial Chemical Industries, Ltd., and Moore, J. W. Dyeing cellulose esters, etc. 16,821. June 9.

International Combustion, Ltd. Apparatus for carbonising and distilling material. 16,693. June 8.

Merturi, G., Jakowa-, and Poggioli, J. A. Softening, etc., materials composed of casein treated with formaldehyde, etc. 16,598. June 7. (France, June 8, 1927.)

Metallbank und Metallurgische Ges. Akt.-Ges. Apparatus for carrying out chemical reactions in a high vacuum. 16,686t June 8. (Germany, June 8, 1927.)

Metals Productions, Ltd., and Taplin, B. and J. J. Heat treatment of oxidised copper ores. 16,340. June 5.

Parkes, D. W., and Robinson, H. W. Methods of obtaining bodies of the ortho-dioxybenzene series, etc. 16,216. June 5.

Soc. of Chemical Industry in Basle. Manufacture of derivatives of vat dyestuffs, and process of printing therewith. 16,694. June 8. (Switzerland, June 8, 1927.)

Wray, E. C. Manufacture of intermediate products, and dyestuffs therefrom. 16,462. June 6.

# Weekly Prices of British Chemical Products

*The prices and comments given below respecting British chemical products are based on direct information supplied by the British manufacturers concerned. Unless otherwise qualified, the figures quoted apply to fair quantities, net and naked at makers' works.*

## General Heavy Chemicals

ACID ACETIC, 40% TECH.—£19 per ton.

ACID BORIC, COMMERCIAL.—Crystal, £30 per ton; powder, £32 per ton; extra fine powder, £34 per ton.

ACID HYDROCHLORIC.—3s. 9d. to 6s. per carboy d/d, according to purity, strength, and locality.

ACID NITRIC, 80° Tw.—£21 10s. to £27 per ton, makers' works, according to district and quality.

ACID SULPHURIC.—Average National prices f.o.r. makers' works, with slight variations up and down owing to local considerations; 140° Tw., Crude Acid, 60s. per ton. 168° Tw., Arsenical, £5 10s. per ton. 168° Tw., Non-arsenical, £6 15s. per ton.

AMMONIA ALKALI.—£6 15s. per ton f.o.r. Special terms for contracts.

BISULPHITE OF LIME.—£7 10s. per ton, f.o.r. London, packages extra.

BLEACHING POWDER.—Spot, £9 10s. per ton d/d; Contract, £8 10s. per ton d/d, 4-ton lots.

BORAX, COMMERCIAL.—Crystals, £19 10s. to £20 per ton; granulated, £19 per ton; powder, £21 per ton. (Packed in 2-cwt. bags carriage paid any station in Great Britain.)

CALCIUM CHLORIDE (SOLID).—£5 to £5 5s. per ton d/d carr. paid.

COPPER SULPHATE.—£25 to £25 10s. per ton.

METHYLATED SPIRIT 61 O.P.—Industrial, 1s 6d. to 1s. 11d. per gall.; pyridinised industrial, 1s. 8d. to 2s. 1d. per gall.; mineralised, 2s. 7d. to 2s. 11d. per gall.; 64 O.P., 1d. extra in all cases.

NICKEL SULPHATE.—£38 per ton d/d.

NICKEL AMMONIA SULPHATE.—£38 per ton d/d.

POTASH CAUSTIC.—£30 to £33 per ton.

POTASSIUM BICHROMATE.—4½d. per lb.

POTASSIUM CHLORATE.—3¾d. per lb., ex wharf, London, in cwt. kegs.

SALAMMONIAC.—£45 to £50 per ton d/d. Chloride of ammonia, £37 to £45 per ton, carr. paid.

SALT CAKE.—£3 15s. to £4 per ton d/d. In bulk.

SODA CAUSTIC, SOLID.—Spot lots delivered, £15 2s. 6d. to £18 per ton, according to strength; 20s. less for contracts.

SODA CRYSTALS.—£5 to £5 5s. per ton, ex railway depots or ports.

SODIUM ACETATE 97/98%.—£21 per ton.

SODIUM BICARBONATE.—£10 10s. per ton, carr. paid.

SODIUM BICHROMATE.—3½d. per lb.

SODIUM BISULPHITE POWDER, 60/62%.—£17 10s. per ton delivered for home market, 1-cwt. drums included; £15 10s. f.o.r. London.

SODIUM CHLORATE.—2¾d. per lb.

SODIUM NITRITE, 100% BASIS.—£27 per ton d/d.

SODIUM PHOSPHATE.—£14 per ton, f.o.b. London, casks free.

SODIUM SULPHATE (GLAUBER SALTS).—£3 12s. 6d. per ton.

SODIUM SULPHIDE CONC. SOLID, 60/65.—£13 5s. per ton d/d. Contract, £13. Carr. paid.

SODIUM SULPHIDE CRYSTALS.—Spot, £8 12s. 6d. per ton d/d. Contract, £8 10s. Carr. paid.

SODIUM SULPHITE, PEA CRYSTALS.—£14 per ton f.o.b. London, 1-cwt. kegs included.

## Coal Tar Products

ACID CARBOLIC CRYSTALS.—6¼d. to 6¾d. per lb. Crude 60's, 2s. 3d. to 2s. 4d. per gall. prompt.

ACID CRESYLIC 99/100.—2s. 8d. to 3s. per gall. 97/99.—2s. 7d. to 2s. 8d. per gall. Pale, 95%, 2s. 5d. to 2s. 6d. per gall. Dark, 2s. 2d. to 2s. 3d.

ANTHRACENE.—A quality, 2½d. per unit. 40%, £5 per ton.

ANTHRACENE OIL, STRAINED.—8d. to 8½d. per gall. Unstrained, 7¾d. to 8d. per gall.

BENZOLE.—Prices at works: Crude, 10½d. to 11d. per gall.; Standard Motor, 1s. 4½d. to 1s. 5d. per gall.; 90%, 1s. 7d. to 1s. 8d. per gall.; Pure, 1s. 10d. to 1s. 11d. per gall.

TOLUOLE.—90%, 1s. 7d. to 2s. per gall. Firm. Pure, 1s. 10d. to 2s. 2d. per gall.

XYLOL.—1s. 1d. to 1s. 11d. per gall. Pure, 2s. 3d. per gall.

CREOSOTE.—Cresylic, 20/24%, 8¾d. to 9d. per gall.; middle oil, 7d. to 8d. per gall. Heavy, 8¼d. to 8½d. per gall. Standard specification, 6¾d. to 7d. ex works. Salty, 7½d. per gall.

NAPHTHA.—Crude, 8½d. to 9½d. per gall. Solvent 90/160, 1s. 1½d. to 1s. 2d. per gall. Solvent 95/160, 1s. 2d. to 1s. 8d. per gall. Solvent 90/190, 9½d. to 1s. 4d. per gall.

NAPHTHALENE CRUDE.—Drained Creosote Salts, £5 per ton. Whizzed, £8 per ton. Hot pressed, £8 10s. to £9 per ton.

NAPHTHALENE.—Crystals, £13 to £14 10s. per ton. Quiet. Flaked, £14 to £15 per ton, according to districts.

PITCH.—Medium soft, 62s. 6d. to 65s. per ton, f.o.b., according to district. Nominal.

PYRIDINE.—90/140, 5s. to 6s. per gall. 90/180, 3s. to 4s. 6d. per gall. Heavy, 2s. 6d. to 3s. per gall.

## Intermediates and Dyes

In the following list of Intermediates delivered prices include packages except where otherwise stated:

ACID AMIDONAPHTHOL DISULPHO (1-8-2-4).—10s. 9d. per lb.

ACID ANTHRANILIC.—6s. per lb. 100 %.

ACID BENZOIC.—1s. 8½d. per lb.

ACID GAMMA.—4s. 6d. per lb.

ACID H.—3s. per lb.

ACID NAPHTHIONIC.—1s. 6d. per lb.

ACID NEVILLE AND WINTHER.—4s. 9d. per lb.

ACID SULPHANILIC.—8½d. per lb.

ANILINE OIL.—8d. per lb. naked at works.

ANILINE SALTS.—8d. per lb. naked at works.

BENZALDEHYDE.—2s. 3d. per lb.

BENZIDINE BASE.—3s. 3d. per lb. 100% basis d/d.

BENZOIC ACID.—1s. 8½d. per lb.

*o*-CRESOL 29/31° C.—5½d. per lb.

*m*-CRESOL 98/100%.—2s. 3d. to 2s. 6d. per lb.

*p*-CRESOL 32/34° C.—2s. 3d. to 2s. 6d. per lb.

DICHLORANILINE.—2s. per lb.

DIMETHYLANILINE.—1s. 11d. per lb.

DINITHROBENZENE.—8½d. per lb. naked at works. £75 per ton.

DINITROCHLORBENZENE.—£84 per ton d/d.

DINITROTOLUENE.—48/50° C. 8d. per lb. naked at works. 66/68° C. 9d. per lb. naked at works.

DIPHENYLAMINE.—2s. 10d. per lb. d/d.

*a*-NAPHTHOL.—2s. per lb. d/d.

*B*-NAPHTHOL.—10d. per lb. d/d.

*a*-NAPHTHYLAMINE.—1s. 3d. per lb.

*B*-NAPHTHYLAMINE.—3s. per lb.

*o*-NITRANILINE.—5s. 9d. per lb.

*m*-NITRANILINE.—3s. per lb. d/d.

*p*-NITRANILINE.—1s. 8d. per lb.

NITROBENZENE.—6d. per lb. naked at works.

NITRONAPHTHALENE.—1s. 3d. per lb.

R. SALT.—2s. 2d. per lb.

SODIUM NAPHTHIONATE.—1s. 8½d. per lb. 100% basis d/d.

*o*-TOLUIDINE.—8d. per lb.

*p*-TOLUIDINE.—1s. 10d. per lb. naked at works.

*m*-XYLIDINE ACETATE.—2s. 6d. per lb. 100%.

N. W. ACID.—4s. 9d. per lb. 100%.

## Wood Distillation Products

ACETATE OF LIME.—Brown, £10 5s. per ton. Good demand. Grey, £14 10s. to £15 per ton. Liquor, 9d. per gall.

CHARCOAL.—£6 to £9 per ton, according to grade and locality. Foreign competition severe.

IRON LIQUOR.—1s. 3d. per gall, 32° Tw. 1s. per gall. 24° Tw.

RED LIQUOR.—9d. to 10d. per gall.

WOOD CREOSOTE.—1s. 9d. per gall. Unrefined.

WOOD NAPHTHA, MISCIBLE.—3s. 11d. to 4s. 3d. per gall. Solvent, 4s. 3d. per gall.

WOOD TAR.—£4 to £5 per ton.

BROWN SUGAR OF LEAD.—£40 15s. per ton.

## Rubber Chemicals

ANTIMONY SULPHIDE.—Golden, 6½d. to 1s. 5½d. per lb., according to quality; Crimson, 1s. 4d. to 1s. 6d. per lb., according to quality.

ARSENIC SULPHIDE, YELLOW.—1s. 9d. per lb.

BARYTES.—£3 10s. to £6 15s. per ton, according to quality.

CADMIUM SULPHIDE.—2s. 6d. to 2s. 9d. per lb.

CARBON BISULPHIDE.—£20 to £25 per ton, according to quantity.

CARBON BLACK.—5½d. per lb., ex wharf.

CARBON TETRACHLORIDE.—£45 to £50 per ton, according to quantity. drums extra.

CHROMIUM OXIDE, GREEN.—1s. 1d. per lb.

DIPHENYLGUANIDINE.—3s. 9d. per lb.

INDIARUBBER SUBSTITUTES, WHITE AND DARK.—5¾d. to 6¼d. per lb.

LAMP BLACK.—£35 per ton, barrels free.

LEAD HYPOSULPHITE.—9d. per lb.

LITHOPHONE, 30%.—£22 10s. per ton.

MINERAL RUBBER "RUBPRON."—£13 12s. 6d. per ton, f.o.r. London.

SULPHUR.—£9 to £11 per ton, according to quality.

SULPHUR CHLORIDE.—4d. to 7d. per lb., carboys extra.

SULPHUR PRECIP. B.P.—£47 10s. to £50 per ton.

THIOCARBAMIDE.—2s. 6d. to 2s. 9d. per lb., carriage paid.

THIOCARBANILIDE.—2s. 1d. to 2s. 3d. per lb.

VERMILION, PALE OR DEEP.—6s. to 6s. 3d. per lb.

ZINC SULPHUR.—1s. per lb.

## Pharmaceutical and Photographic Chemicals

ACID, ACETIC, PURE, 80%.—£39 per ton ex wharf London in glass containers.

ACID, ACETYL SALICYLIC.—2s. 7d. to 2s. 8d. per lb.

ACID, BENZOIC, B.P.—2s. to 3s. 3d. per lb., according to quantity. Solely ex Gum, 1s. 3d. to 1s. 6d. per oz., according to quantity.

ACID, BORIC B.P.—Crystal, 36s. to 39s. per cwt.; powder, 40s. to 43s. per cwt.; extra fine powder, 42s. per cwt., according to quantity. Carriage paid any station in Great Britain, in ton lots.
ACID, CAMPHORIC.—19s. to 21s. per lb.
ACID, CITRIC.—1s. 10½d. to 1s. 11½d. per lb. Less 5%.
ACID, GALLIC.—2s. 8d. per lb. for pure crystal, in cwt. lots.
ACID, PYROGALLIC, CRYSTALS.—7s. 3d. per lb. Resublimed, 8s. 3d. per lb.
ACID, SALICYLIC, B.P. PULV.—1s. 4½d. to 1s. 6d. per lb. Technical.—10½d. to 11½d. per lb.
ACID, TANNIC B.P.—2s. 8d. to 2s. 10d. per lb.
ACID, TARTARIC.—1s. 4½d. per lb., less 5%.
ACETANILIDE.—1s. 5d. to 1s. 8d. per lb. for quantities.
AMIDOL.—7s. 6d. to 9s. per lb., d/d.
AMIDOPYRIN.—8s. to 8s. 3d. per lb.
AMMONIUM BENZOATE.—3s. 3d. to 3s. 6d. per lb., according to quantity. 18s. per lb. ex Gum.
AMMONIUM CARBONATE B.P.—£37 per ton. Powder, £39 per ton in 5 cwt. casks. Resublimated, 1s. per lb.
ATROPINE SULPHATE.—9s. per oz.
BARBITONE.—5s. 9d. to 6s. per lb.
BENZONAPHTHOL.—3s. 3d. per lb. spot.
BISMUTH CARBONATE.—11s. 4d. to 11s. 7d. per lb.
BISMUTH CITRATE.—10s. 4d. to 10s. 7d. per lb.
BISMUTH SALICYLATE.—10s. 7d. to 10s. 10d. per lb.
BISMUTH SUBNITRATE.—9s. 7d. to 9s. 10d. per lb.
BISMUTH NITRATE.—6s. 7d. to 6s. 10d. per lb.
BISMUTH OXIDE.—14s. 7d. to 14s. 10d. per lb.
BISMUTH SUBCHLORIDE.—14s. 4d. to 14s. 7d. per lb.
BISMUTH SUBGALLATE.—8s. 7d. to 8s. 10d. per lb. Extra and reduced prices for smaller and larger quantities of all bismuth salts respectively.
BISMUTHI ET AMMON LIQUOR.—Cit. B.P. in W. Qts. 1s. 1½d. per lb.; 12 W. Qts. 1s. 0½d. per lb.; 36 W. Qts., 1s. per lb.
BORAX B.P.—Crystal, 24s. to 27s. per cwt.; powder, 25s. to 28s. per cwt., according to quantity. Carriage paid any station in Great Britain, in ton lots.
BROMIDES.—Ammonium, 2s. 1d. to 2s. 3d. per lb.; potassium, 1s. 9¾d. to 1s. 11¾d. per lb.; sodium, 2s. to 2s. 2d. per lb.; granulated, ½d. per lb. less; all spot. Large quantities at lower rates.
CALCIUM LACTATE.—1s. 2d. to 1s. 4d. per lb.
CAMPHOR.—Refined flowers, 2s. 11d. to 3s. per lb., according to quantity; also special contract prices.
CHLORAL HYDRATE.—3s. 2d. to 3s. 4d. per lb.
CHLOROFORM.—2s. 4½d. to 2s. 7½d. per lb., according to quantity.
CREOSOTE CARBONATE.—6s. per lb.
ETHERS.—S.G. ·730—11½d. to 1s. 0½d. per lb., according to quantity; other gravities at proportionate prices.
FORMALDEHYDE.—£39 per ton, in barrels ex wharf.
GUAIACOL CARBONATE.—4s. 9d. to 5s. per lb.
HEXAMINE.—2s. 3d. to 2s. 6d. per lb.
HOMATROPINE HYDROBROMIDE.—30s. per oz.
HYDRASTINE HYDROCHLORIDE.—English make offered at 120s. per oz.
HYDROGEN PEROXIDE (12 VOLS.).—1s. 4d. per gallon, f.o.r. makers' works, naked. Winchesters, 2s. 11d. per gall. B.P., 10 vols., 2s. to 2s. 3d. per gall.; 20 vols., 4s. per gall.
HYDROQUINONE.—3s. 9d. to 4s. per lb., in cwt. lots.
HYPOPHOSPHITES.—Calcium, 3s. 6d. per lb., for 28 lb. lots; potassium, 4s. 1d. per lb.; sodium, 4s. per lb.
IRON AMMONIUM CITRATE.—B.P., 2s. 6d. to 2s. 9d. per lb. Green, 2s. 9d. to 3s. 2d. per lb.; U.S.P., 2s. 7d. to 2s. 10d. per lb.
IRON PERCHLORIDE.—18s. to 20s. per cwt., according to quantity.
IRON QUININE CITRATE.—B.P., 8¾d. to 9¼d. per oz.
MAGNESIUM CARBONATE.—Light commercial, £31 per ton net.
MAGNESIUM OXIDE.—Light commercial, £62 10s. per ton, less 2½%; Heavy commercial, £21 per ton, less 2½%; in quantity lower; Heavy Pure, 2s. to 2s. 3d. per lb., in 1 cwt. lots.
MENTHOL.—A.B.R. recrystallised B.P., 16s. per lb. net for January delivery; Synthetic, 9s. to 10s. per lb.; Synthetic detached crystals, 9s. to 12s. 6d. per lb., according to quantity; Liquid (95%), 9s. 6d. per lb.
MERCURIALS B.P.—Up to 1 cwt. lots, Red Oxide, 7s. 6d. to 7s. 7d. per lb., levig., 7s. to 7s. 1d. per lb.; Corrosive Sublimate, Lump, 5s. 9d. to 5s. 10d. per lb., Powder, 5s. 2d. to 5s. 3d. per lb.; White Precipitate, Lump, 5s. 11d. to 6s. per lb., Powder, 6s. to 6s. 1d. per lb., Extra Fine, 6s. 1d. to 6s. 2d. per lb.; Calomel, 6s. 4d. to 6s. 5d. per lb.; Yellow Oxide, 6s. 10d. to 6s. 11d. per lb.; Persulph., B.P.C., 6s. 1d. to 6s. 2d. per lb.; Sulph. nig., 5s. 10d. to 5s. 11d. per lb. Special prices for larger quantities.
METHYL SALICYLATE.—1s. 5d. to 1s. 9d. per lb.
METHYL SULPHONAL.—9s. to 9s. 3d. per lb.
METOL.—9s. to 11s. 6d. per lb. British make.
PARAFORMALDEHYDE.—1s. 9d. per lb. for 100% powder.
PARALDEHYDE.—1s. 1d. to 1s. 4d. per lb.
PHENACETIN.—2s. 6d. to 2s. 9d. per lb.
PHENAZONE.—4s. to 4s. 3d. per lb.
PHENOLPHTHALEIN.—6s. to 6s. 3d. per lb.
POTASSIUM BITARTRATE 99/100% (Cream of Tartar).—100s. per cwt., less 2½ per cent.
POTASSIUM CITRATE.—B.P.C., 2s. 4d. to 2s. 7d. per lb.; U.S.P., 2s. 3d. to 2s. 6d. per lb.
POTASSIUM FERRICYANIDE.—1s. 9d. per lb., in cwt. lots.
POTASSIUM IODIDE.—16s.8d.to 17s.2d.per lb., according to quantity.
POTASSIUM METABISULPHITE.—6d. per lb., 1-cwt. kegs included, f.o.r. London.
POTASSIUM PERMANGANATE.—B.P. crystals, 5½d. per lb., spot.
QUININE SULPHATE.—1s. 8d. to 1s. 9d. per oz., bulk in 100 oz. tins.
RESORCIN.—2s. 10d. to 3s. per lb., spot.
SACCHARIN.—47s. per lb.; in quantity lower.
SALOL.—2s. 4d. per lb.
SODIUM BENZOATE, B.P.—1s. 8d. to 1s. 11d. per lb.
SODIUM CITRATE, B.P.C., 1911—2s. 1d. to 2s. 4d. per lb., B.P.C. 1923—2s. 6d. to 2s. 7d. per lb. U.S.P., 2s. 4d. to 2s. 7d. per lb., according to quantity.
SODIUM FERROCYANIDE.—4d. per lb., carriage paid.
SODIUM HYPOSULPHITE, PHOTOGRAPHIC.—£15 per ton, d/d consignee's station in 1-cwt. kegs.
SODIUM NITROPRUSSIDE.—16s. per lb.
SODIUM POTASSIUM TARTRATE (ROCHELLE SALT).—95s. to 100s. per cwt. Crystals, 5s. per cwt. extra.
SODIUM SALICYLATE.—Powder, 1s. 7d. to 1s. 9d. per lb. Crystal, 1s. 8d. to 1s. 10d. per lb.
SODIUM SULPHIDE, PURE RECRYSTALLISED.—10d. to 1s. 1d. per lb.
SODIUM SULPHITE, ANHYDROUS.—£27 10s. to £28 10s. per ton, according to quantity. Delivered U.K.
SULPHONAL.—6s. 9d. to 7s. per lb.
TARTAR EMETIC, B.P.—Crystal or powder, 2s. 1d. to 2s. 2d. per lb.
THYMOL.—Puriss., 9s. 6d. to 9s. 9d. per lb., according to quantity. Firmer. Natural, 14s. 3d. per lb.

## Perfumery Chemicals

ACETOPHENONE.—7s. per lb.
AUBEPINE (EX ANETHOL).—10s. per lb.
AMYL ACETATE.—2s. 6d. per lb.
AMYL BUTYRATE.—4s. 9d. per lb.
AMYL SALICYLATE.—2s. 9d. per lb.
ANETHOL (M.P. 21/22° C.).—5s. 3d. per lb.
BENZYL ACETATE FROM CHLORINE-FREE BENZYL ALCOHOL.—2s. per lb.
BENZYL ALCOHOL FREE FROM CHLORINE.—2s. per lb.
BENZALDEHYDE FREE FROM CHLORINE.—2s. 6d. per lb.
BENZYL BENZOATE.—2s. 6d. per lb.
CINNAMIC ALDEHYDE NATURAL.—15s. 6d. per lb.
COUMARIN.—9s. 9d. per lb.
CITRONELLOL.—13s. 6d. per lb.
CITRAL.—8s. 3d. per lb.
ETHYL CINNAMATE.—6s. per lb.
ETHYL PHTHALATE.—2s. 6d. per lb.
EUGENOL.—10s. 6d. per lb.
GERANIOL (PALMAROSA).—22s. per lb.
GERANIOL.—6s. 6d. to 11s. per lb.
HELIOTROPINE.—4s. 9d. per lb.
ISO EUGENOL.—14s. 6d. per lb.
LINALOL.—Ex Bois de Rose, 15s. per lb. Ex Shui Oil, 10s. 6d. per lb.
LINALYL ACETATE.—Ex Shui Oil, 14s. 6d. per lb. Ex Bois de Rose, 18s. 6d. per lb.
METHYL ANTHRANILATE.—8s. 6d. per lb.
METHYL BENZOATE.—4s. per lb.
MUSK KETONE.—35s. per lb.
MUSK XYLOL.—7s. per lb.
NEROLIN.—3s. 6d. per lb.
PHENYL ETHYL ACETATE.—11s. per lb.
PHENYL ETHYL ALCOHOL.—10s. 6d. per lb.
RHODINOL.—38s. per lb.
SAFROL.—1s. 6d. per lb.
TERPINEOL.—1s. 6d. per lb.
VANILLIN.—16s. 6d. per lb.

## Essential Oils

ALMOND OIL.—Foreign S.P.A., 10s. 6d. per lb.
ANISE OIL.—2s. 9d. per lb.
BERGAMOT OIL.—26s. per lb.
BOURBON GERANIUM OIL.—21s. per lb.
CAMPHOR OIL.—9d. per lb.
CANANGA OIL, JAVA.—12s. 9d. per lb.
CINNAMON OIL LEAF.—6s. 9d. per oz.
CASSIA OIL, 80/85%.—8s. per lb.
CITRONELLA OIL.—Java, 2s. 2d. per lb., c.i.f. U.K. port. Ceylon, pure, 2s. 3d. per lb.
CLOVE OIL.—6s. 6d. per lb.
EUCALYPTUS OIL, AUSTRALIAN, 70/75%.—2s. 1d. per lb.
LAVENDER OIL.—Mont Blanc, 48/50%, Esters, 16s. per lb.
LEMON OIL.—13s. per lb.
LEMONGRASS OIL.—4s. 3d. per lb.
ORANGE OIL, SWEET.—37s. 6d. per lb.
OTTO OF ROSE OIL.—Anatolian, 35s. per oz. Bulgarian, 55s. per oz.
PALMA ROSA OIL.—14s. 6d. per lb.
PEPPERMINT OIL.—Wayne County, 15s. per lb.; Japanese, 7s. per lb.
PETITGRAIN.—7s. 3d. per lb. Sandalwood, Mysore, 26s. 6d. per lb., 90/95%, 16s. 6d. per lb.

# London Chemical Market

*The following notes on the London Chemical Market are specially supplied to* THE CHEMICAL AGE *by Messrs. R. W. Greeff & Co., Ltd., and Messrs. Chas. Page & Co., Ltd., and may be accepted as representing these firms' independent and impartial opinions.*

*London, June 14, 1928.*

BUSINESS during the past week has been slightly better. Prices continue firm. The export inquiry has been good.

### General Chemicals

ACETONE is firm and in good request at £65 to £67 per ton.

ACID ACETIC.—Price unchanged, with improved demand.

ACID FORMIC is unchanged at £47 per ton for 85%. Fair demand.

ACID LACTIC.—Unchanged.

ACID OXALIC remains firm at £31 to £33 per ton with fair inquiry.

ACID TARTARIC remains in fair demand, and price unchanged at 1s. 4½d. to 1s. 5d. per lb.

AMMONIUM CHLORIDE.—Unchanged.

ALUMINA SULPHATE is in very short supply with good demand. Prices at present are unchanged at £6 to £6 10s. per ton for 17–18%.

ARSENIC.—Unchanged.

BARIUM CHLORIDE is still in short supply for early delivery with good demand. Price £8 10s. to £9 per ton.

COPPER SULPHATE.—Unchanged.

CREAM OF TARTAR is in fair demand at £104 per ton less 2½% for 99–100% B.P.

FORMALDEHYDE is in good demand, price £39 10s. for 40% in casks.

LEAD ACETATE is advancing and in good demand. White £42 to £43 per ton with brown £1 per ton less.

LEAD NITRATE.—Unchanged at £37 per ton.

LIME ACETATE.—Unchanged.

METHYL ACETONE.—Demand continues, price unchanged at £56 to £58 per ton for 45%.

POTASSIUM CARBONATE and CAUSTIC.—Unchanged.

POTASSIUM CHLORATE remains steady at 3d. to 3½d. per lb. demand fair.

POTASSIUM PERMANGANATE is very firm with good demand. B.P. 5¼d. per lb, commercial ½d. per lb. less.

POTASSIUM PRUSSIATE.—Unchanged at £63 10s. to £65 10s. per ton according to quantity, with fair position.

SODA ACETATE is still in very short supply with good demand, price firm at £22 per ton.

SODA PHOSPHATE.—Unchanged.

SODA PRUSSIATE is firm with good demand at 5d. per lb.

SODA SULPHIDE.—Unchanged.

TARTAR EMETIC is firm at 11¾d. per lb. with improved demand.

ZINC SULPHATE.—Unchanged.

### Coal Tar Products

The market for coal tar products remains quiet, with little change in prices to report from last week.

MOTOR BENZOL.—Owing to small demand, we believe this could be bought at 1s. 4d. per gallon, on rails.

SOLVENT NAPHTHA is quoted at 1s. 1d. to 1s. 2d. per gallon on rails, at works.

HEAVY NAPHTHA is quoted at 1s. 1d. to 1s. 2d. per gallon on rails, at works.

CREOSOTE OIL.—The present day price is about 6½d. per gallon on rails in the North, and about 7d. per gallon on rails in London. Creosote for the forward position has a weaker tendency.

CRESYLIC ACID is unchanged from last week, the 98/100% quality being quoted at about 2s. 6d. per gallon f.o.b., and the dark 95/97% at about 1s. 10d. to 1s. 11d. per gallon.

NAPHTHALENES remain slightly weaker, the 74/76 quality being quoted at £6 per ton, and the 76/78 quality at £6 10s. to £7 per ton.

PITCH is unchanged and little interest is shown in the material. To-day's value is 60s. to 65s. per ton f.o.b. main U.K. port.

## Latest Oil Prices

LONDON, June 13.—LINSEED OIL steadier for near. Spot, ex-mill, £30 10s.; June, £29 7s. 6d.; July-August, £29 10s.; September-December, £29 17s. 6d.; and January-April, £30 5s., naked. RAPE OIL steady. Crude extracted, £42 5s.; technical refined, £44 5s., naked, ex-wharf. COTTON OIL slow. Egyptian crude, £35; refined common edible, £40; deodorised, £42 per ton, naked. TURPENTINE firm, and 1s. 9d. to 1s. 6d. per cwt. higher. American, spot, 43s., paid, 43s. 3d., sellers; July-December, 44s. 9d., sellers.

HULL, June 13.—LINSEED OIL.—Spot and June, £29 5s.; July-August, £29 7s. 6d.; September-December, £29 15s. per ton, naked. COTTON OIL.—Bombay crude, £31; Egyptian crude, £33 15s.; edible refined, £37 10s.; technical, £35; deodorised, £39 10s. per ton, naked. PALM KERNEL OIL.—Crushed, naked, 5½ per cent., £38 10s. per ton. GROUNDNUT OIL.—Crushed/extracted, £39; deodorised, £43 per ton. SOYA OIL.—Extracted and crushed, £33 5s.; deodorised, £36 15s. per ton. RAPE OIL.—Crude/extracted, £40 15s.; refined, £42 15s. per ton, net cash terms, ex mill. TURPENTINE.—Spot, 44s. 6d. per cwt. CASTOR OIL and COD OIL unchanged.

## South Wales By-Products

SOUTH Wales by-product activities continue to be on the quiet side, with values generally unchanged. The only notable feature is the continued strength of refined tars. The demand for this product, mainly from road contractors and local authorities engaged in road work, is surprisingly strong, but prices are unchanged. Pitch has very little call on the basis of 60s. to 65s. per ton, delivered. Naphthas are quiet, and prices have an easy tendency. Heavy naphtha is unchanged at from 1s. to 1s. 1d. per gallon, f.o.r., while solvent remains at from 1s. 1d. to 1s. 2d. per gallon, f.o.r. Crude naphthalene is unchanged round about 80s. per ton, f.o.r., while whizzed continues to change hands round about 90s. per ton f.o.r. Crude tar has a quiet call round about 50s. per ton, but creosote has again weakened and is on offer at from 6¼d. to 6¾d. per gallon, f.o.r. makers' works. Refined tar prices are: coke oven, from 8d. to 8¼d. per gallon delivered; gasworks, from 7¾d. to 8¼d. per gallon delivered. Patent fuel and coke exports continue to be moderate, but there is a tendency towards improvement. There is no change in values, patent fuel, for export, from Cardiff is steady at from 21s. to 22s. per ton, while Swansea prices remain at from 20s. to 20s. 6d. per ton. Coke, best foundry, is quiet at from 32s. 6d. to 37s. per ton, furnace at 19s. to 21s. per ton, and other sorts from 25s. to 32s. 6d. per ton.

## Nitrogen Products

*Export.*—As anticipated in our last report, on account of the continuity of production and the diminution of demand, price has receded slightly. The present price is £9 10s. f.o.b. U.K. port in new single bags. It is anticipated that prices will fall a little further until a definite price is quoted by the large producers on the Continent. On the whole, on account of the good demand last season, the nitrogen position is quite firm. Although the year 1928–29 will witness a vast increase in production, it is not expected that the general level of prices will be lower than in the year just ending.

*Home.*—It is not expected that the price scale for the year 1928-29 will be announced until towards the end of July. In the meantime it is probable that the March–May price will be continued. Small orders continue to come in from certain areas where sulphate is used late.

*Nitrate of Soda.*—Nitrate producers are awaiting the announcement of sulphate prices on the Continent before announcing their prices for the new season. In the meantime, the price continues at 16s. to 16s. 6d. per metric quintal f.a.s. Chile.

### Soda Ash in Japan

SODA ASH cannot be manufactured in bulk in Japan owing to the scarcity of salt. The South Manchuria Railway Co. has been investigating methods of manufacture in which is used cheap salt from the Kwantung District, where the yearly output reaches 500,000,000 lb. A plan has been drawn up, and application is to be made to the Japanese Government to establish a soda ash industry. Soda ash is at present chiefly produced by one or two Japanese glass companies.

### World Production of Chemicals

IN A REVIEW of world economic conditions in 1927, Mr. Alberto Pirelli, president of the International Chamber of Commerce, states that the world production of superphosphates increased by 15 per cent.; that of nitrate, dyestuffs, caustic soda and sodium carbonate showed a decrease, and that of potash a still more marked decrease. The world production of nitrate is estimated as follows:—Synthetic nitrate, 840,000 tons (60 per cent. of the total); coke oven nitrate, 310,000 tons (22·1 per cent.); Chilean nitrate, 250,000 tons (17·9 per cent.). The output of potash in the two principal producing countries was estimated as, Germany 1,240,000 tons, and France 372,000 tons.

# Scottish Chemical Market

*The following notes on the Scottish Chemical Market are specially supplied to* THE CHEMICAL AGE *by Messrs. Charles Tennant and Co., Ltd., Glasgow, and may be accepted as representing the firm's independent and impartial opinion.*

*Glasgow, June 13, 1928.*

THE heavy chemical market continues to be fairly active and during the past week export inquiry has been good. There are no changes in prices of any importance to record.

### Industrial Chemicals

ACETONE, B.G.S.—£64 to £67 per ton, ex store, according to quantity.

ACID ACETIC.—98/100% glacial, £56 to £67 per ton according to quality and packing, c.i.f. U.K. ports; 80% pure, £37 10s. per ton, ex wharf; 80% technical, £37 10s. per ton, ex wharf.

ACID BORIC.—Crystals, granulated or small flakes, £30 per ton; powder, £32 per ton, packed in bags, carriage paid U.K. stations.

ACID CARBOLIC ICE CRYSTALS.—Quoted 6¼d. per lb., delivered. In little request.

ACID CITRIC, B.P.—Offered for spot delivery at 1s. 11¼d. per lb., less 5%, ex store. Quoted 1s. 11d. per lb., less 5%, ex wharf, to come forward.

ACID HYDROCHLORIC.—Usual steady demand. Arsenical quality, 4s. per carboy. Dearsenicated quality, 5s. 6d. per carboy, ex works, full wagon loads.

ACID NITRIC.—80° quality, £24 10s. per ton, ex station, full truck loads.

ACID OXALIC, 98/100%.—On offer from the Continent at 3¼d. per lb., ex wharf. Spot material, quoted 3½d. per lb., ex store. In better demand.

ACID SULPHURIC.—£2 15s. per ton, ex works, for 144° quality; £5 15s. per ton for 168° quality. Dearsenicated quality, 20s. per ton extra.

ACID TARTARIC, B.P. CRYSTALS.—Now quoted 1s. 4¼d. per lb., less 5%, ex wharf.

ALUMINA SULPHATE, 17/18%, IRON FREE.—Quoted £5 10s. per ton, c.i.f. U.K. ports prompt shipment. Spot material available at about £5 15s. per ton, ex store.

ALUM, LUMP POTASH.—Spot material available at about £9 per ton, ex store. Crystal meal quoted £8 10s. per ton, ex store. Lump quality on offer from the Continent at £8 5s. per ton, c.i.f. U.K. ports.

AMMONIA, ANHYDROUS.—Quoted 9d. per lb., carriage paid, containers extra and returnable.

AMMONIA CARBONATE.—Lump, £37 per ton; powdered, £39 per ton, packed in 5 cwt. casks, delivered or f.o.b. U.K. ports.

AMMONIA LIQUID, 880°.—Unchanged at about 2½d. to 3d. per lb., delivered according to quantity.

AMMONIA MURIATE.—Grey galvanisers' crystals of British manufacture quoted £21 to £22 per ton, ex station. Continental, about £19 per ton, c.i.f. U.K. ports. Fine white crystals of Continental manufacture quoted £16 15s. per ton, c.i.f. U.K. ports.

ARSENIC, WHITE POWDERED.—On offer for prompt despatch from mines, £19 per ton, ex wharf. Spot material, quoted £20 per ton, ex store.

BARIUM CARBONATE, 98/100%.—English material on offer at £7 5s. per ton, ex store. Continental quoted £7 per ton, c.i.f. U.K. ports.

BARIUM CHLORIDE, 98/100%.—Large white crystals, quoted £6 15s. per ton c.i.f. U.K. ports.

BLEACHING POWDER.—British manufacturers' contract price to consumers, £6 12s. 6d. per ton, delivered, minimum 4-ton lots. Continental on offer at £6 10s. per ton, ex wharf.

CALCIUM CHLORIDE.—British manufacturers' price, £4 5s. to £4 15s. per ton, according to quantity and point of delivery. Continental material on offer at £3 12s. 6d. per ton, c.i.f. U.K. ports.

COPPERAS, GREEN.—Unchanged at about £3 10s. per ton, f.o.r. works or £4 12s. 6d. per ton, f.o.b. U.K. ports for export.

COPPER SULPHATE.—Quoted £24 10s. per ton, c.i.f. U.K. ports, but some spot parcels available at somewhat less.

FORMALDEHYDE, 40%.—Quoted £35 10s. per ton, c.i.f. U.K. ports. Spot material now on offer at £38 per ton, ex store.

GLAUBER SALTS.—English material unchanged at £4 per ton, ex store or station. Continental quoted £2 15s. per ton, c.i.f. U.K. ports.

LEAD, RED.—Imported material on offer at £31 per ton, ex store.

LEAD, WHITE.—Quoted £31 10s. per ton, ex store.

LEAD ACETATE.—White crystals quoted £39 15s. per ton, c.i.f. U.K. ports. Brown, £32 10s. per ton, c.i.f. U.K. port. Spot material on offer at £42 15s. per ton, ex store, spot delivery.

MAGNESITE, GROUND CALCINED.—Quoted £8 10s. per ton, ex store, in moderate demand.

METHYLATED SPIRIT.—Industrial quality, 64° O.P., quoted 1s. 7d. per gallon, less 2½%., delivered.

POTASSIUM BICHROMATE.—4¼d. per lb. delivered, minimum 4-ton lots. Under 4-ton lots ¼d. per lb. extra.

POTASSIUM CARBONATE, 96/98%.—Quoted £25 10s. per ton, ex wharf, prompt shipment from the Continent. Spot material available at £26 10s. per ton, ex store.

POTASSIUM CHLORATE, 99/100%.—Powder quoted £23 10s. per ton, c.i.f. U.K. ports. Crystals, 30s. per ton extra. B.P. quality crystals or powder offered at £32 per ton, c.i.f. U.K. ports.

POTASSIUM NITRATE.—Refined granulated quality quoted £19 2s. 6d. per ton, c.i.f. U.K. ports. Spot material on offer at about £20 10s. per ton, ex store.

POTASSIUM PERMANGANATE, B.P. CRYSTALS.—Quoted 5½d. per lb., ex wharf.

POTASSIUM PRUSSIATE (YELLOW).—Unchanged at about 6½d. per lb., ex store spot delivery. Offered from the Continent at 6¾d. per lb.

SODA CAUSTIC.—Powdered, 98/99%, £17 17s. 6d. per ton; solid, 76/77%, £14 10s. per ton; and, 70/72%, £13 12s. 6d. per ton, minimum 4-ton lots carriage paid on contract. Spot material 10s. per ton extra.

SODIUM ACETATE.—Spot material on offer at about £22 per ton, ex store.

SODIUM BICARBONATE.—Refined recrystallised £10 10s. per ton, ex quay or station. M.W. quality 30s. per ton less.

SODIUM BICHROMATE.—Quoted 3d. per lb. delivered, buyers works, minimum 4-ton lots. Under 4 and over 2-ton lots 3 1/16d. per lb. Under 2-ton lots 3⅛d. per lb.

SODIUM CARBONATE (SODA CRYSTALS).—£5 to £5 5s. per ton, ex quay or station. Powdered or pea quality 27s. 6d. per ton extra. Light soda ash £7 3s. 9d. per ton, ex quay, minimum 4-ton lots with various reductions for contracts.

SODIUM HYPOSULPHITE.—Large crystals of English manufacture quoted £8 17s. 6d. per ton, ex station, minimum 4-ton lots. Pea crystals on offer at £14 15s. per ton, ex station, minimum 4-ton lots.

SODIUM NITRATE.—Quoted £11 per ton, ex store.

SODIUM NITRITE, 100%.—Quoted £19 10s. per ton, ex store.

SODIUM PRUSSIATE.—Ill moderate demand. Spot material now quoted 4¾d. per lb., ex store.

SODIUM SULPHATE (SALTCAKE).—Prices 50s. per ton, ex works, for unground quality 52s. 6d. per ton delivered. Ground quality 2s. 6d. per ton extra.

SODIUM SULPHIDE.—Prices for home consumption: Solid, 60/62%, £9 per ton; broken, 60/62%, £10 per ton; crystals, 30/32%, £7 2s. 6d. per ton, delivered, buyers works on contract, minimum 4-ton lots. Special prices for some consumers. Spot material 5s. per ton extra.

SULPHUR.—Flowers, £12 per ton; roll, £10 15s. per ton; rock, £10 12s. 6d. per ton; ground American, £9 5s. per ton, ex store. Prices nominal.

ZINC CHLORIDE.—British material, 98/100%, quoted £24 15s. per ton, f.o.b. U.K. ports; 98/100%, solid on offer from the Continent at about £21 15s. per ton, c.i.f. U.K. ports. Powdered, 20s. per ton extra.

ZINC SULPHATE.—Quoted £11 per ton, ex wharf, prompt shipment from the Continent.

NOTE.—The above prices are for bulk business and are not to be taken as applicable to small parcels.

---

### I.C.I. Purchases Interest in Canadian Company

FOLLOWING an examination by its representative, Major Hodgkins, Imperial Chemical Industries, Ltd., has purchased a substantial interest in the Malagash Salt Co., Nova Scotia. The purchase is stated to be the result of a report that potash indications on the Malagash properties are more promising than were the original indications in the German potash fields. Dr. Hayes, of New Jersey, has been retained by Imperial Chemical Industries further to examine the area for potash.

---

### Czechoslovak-German Cellulose Agreement

H.M. COMMERCIAL Secretary at Berlin (Mr. J. Thelwell) informs the Department of Overseas Trade that according to *Industrie und Handelszeitung* a decision has been reached to prolong the export contingent agreement for cellulose from Czechoslovakia to Germany. According to the previous half-yearly agreement, the export of 30,000 tons of cellulose was permitted annually from Czechoslovakia to Germany.

# Manchester Chemical Market

(From Our Own Correspondent.)

*Manchester, June 14, 1928.*

Quotations for chemical products on this market keep pretty steady in almost every direction, and in few instances is there any easing off to report this week. The selling movement to home trade users is on a fair scale in the aggregate and contract deliveries of many varieties of "heavy" products are fully maintained at their recent level. On the spot market conditions are inclined to be patchy and there is keen competition among sellers for the business that is passing.

### Heavy Chemicals

In phosphate of soda a moderate inquiry has been reported and values in this section are not greatly changed since last report, current offers ranging from £12 to £12 5s. per ton. Saltcake is still not particularly active, but at about £2 12s. 6d. per ton prices are fairly steady. Quotations for sulphide of sodium are at round £10 per ton for the 60-65 per cent. concentrated solid quality and from £7 15s. to £8 for the commercial grade, a quiet trade in this being reported. Caustic soda continues to move off in fairly regular quantities against contracts and prices are firm at from £13 7s. 6d. to £15 7s. 6d. per ton, according to quality. With regard to bichromate of soda, offers of this this week have been in the neighbourhood of 3d. per lb. and a quietly steady demand has been met with. Much the same conditions have obtained in respect of chlorate of soda, with values at from 2¾d. to 3d. per lb. Bicarbonate of soda is well held at about £10 10s. per ton and sales of this are not unsatisfactory. A moderate trade is going through in the case of hyposulphite of soda, commercial material being at round £9 5s. per ton and photographic at £15 10s. Bleaching powder meets with a quietly steady demand on contract account at about £7 per ton. Nitrite of soda is about maintained at £19 5s. per ton, but not a great deal of buying interest has been shown this week. Alkali is firm and in fairly active inquiry at about £6 2s. 6d. per ton. With regard to prussiate of soda this keeps steady at from 4½d. to 5d. per lb., according to quantity and a moderate business is being put through.

Inquiry for caustic potash keeps up and there is no change in the price situation, round £33 5s. per ton being quoted here for prompt delivery of one to five-ton lots. Carbonate of potash seems to be fairly steady again and a quiet trade is reported at £25 per ton. Current quotations for bichromate of potash are at about 4d. per lb. and a moderate movement in this material is going on. Offers of chlorate of potash vary from 2¾d. to 3d. per lb., but inquiry for this is rather slow at the moment. Permanganate of potash is on the quiet side, but at about 4¾d. per lb. for the commercial and 5¼d. for the B.P. quality values show little actual change on the week. Yellow prussiate of potash is well held at from 6¾d. to 7¼d. per lb., according to quantity, and meets with a moderately active demand.

With regard to sulphate of copper export inquiry in this section is still pretty regular and prices are steady at from £26 10s. per ton, f.o.b. Arsenic moves off in comparatively small quantities and values are easy at £17 per ton at the mines for white powdered, Cornish makes. Acetate of lime is quiet but steady at about £9 10s. per ton for brown and £16 to £16 10s. for grey. White acetate of lead is about unchanged at £40 10s. per ton, with brown quality on offer at £39 10s. Nitrate of lead is in quiet demand, and prices are held at round £37 per ton.

### Acids and Tar Products

The demand for citric acid on this market remains on a somewhat limited scale, but at 1s. 11d. to 1s. 11½d. per lb. quotations keep pretty steady. Tartaric acid is also quiet, but offers are maintained at up to 1s. 4½d. per lb. Acetic acid is currently quoted at the lower rate of about £36 10s. per ton for the 80 per cent. commercial quality, with glacial on offer at £66. Oxalic acid is in moderate request at 3¼d. per lb.

The by-products market is practically featureless and there is comparatively little stirring in any section. Pitch is about maintained at £2 17s. 6d. per ton, f.o.b., but the demand for this is very slow. Creosote oil is easy and in poor inquiry at 6⅜d. per gallon at works. Crystal carbolic acid is quiet at 6½d. per lb., with crude easier at about 2s. 4d. per gallon. Solvent naphtha is in moderate request and unchanged at 1s. 2d. per gallon.

### Visit of American Ceramic Society

On Wednesday, June 27, at 9.45 a.m., the Mayor of Stoke-on-Trent will accord the American Ceramic Society visiting this country a civic welcome in Station Square, Stoke-on-Trent. The Ceramic Society will entertain the visitors to luncheon at 1 p.m. in the Assembly Room, Town Hall, Stoke-on-Trent. Ladies are invited. Tickets, 10s. 6d. each, inclusive of wines, may be obtained from The Ceramic Society, Technical College, Stoke-on-Trent. In order to facilitate the arrangements for this luncheon applications for tickets, together with remittance, should be made before June 20. On Friday, June 22, a banquet will be given to the American visitors, including the ladies, at the Hotel Cecil, London, the hosts being the principal societies and associations connected with the clay, pottery and glass industries. It is expected that a prominent member of the Government and the American Ambassador will be the principal speakers. The banquet will be at 7.30 and will be followed by a cabaret entertainment. Tickets, 25s. each, inclusive of wines, may be obtained from The Ceramic Society, Stoke-on-Trent. The British Pottery Manufacturers' Federation is entertaining the visitors to dinner on Wednesday, June 27th, in the Assembly Room, Town Hall, Stoke-on-Trent, at 7, for 7.30 p.m. Tickets, 21s. each, inclusive of wines, may be obtained from Mr. S. H. Dodd, Secretary, British Pottery Manufacturers' Federation, Piccadilly, Tunstall.

### Du Pont's Synthetic Nitric Acid Plant

The Du Pont Co. has begun the operation of a unit at the dynamite plant in Alabama. The manufacture of nitric acid by the oxidation of ammonia is now proceeding at the Mineral Springs plant of the company at Birmingham, Alabama. With the completion of this new unit the Birmingham works is a complete plant for the manufacture of all semi-finished products going into the manufacture of dynamite and gelatin dynamite. In 1926-1927, when the company erected its big dynamite plant, no facilities were included for the manufacture of nitric acid, due to the fact that the company had important experimental work under way. This plant is said to have the distinction of having the first commercial installation of this kind in the United States, with the exception of the experimental plant at Repauno, N.J., which is now operated on a commercial basis.

### World's Dairy Congress

The eighth World's Dairy Congress, the first to be held in this country, will take place in the period June 26-July 12. Forty-five different countries will be represented. The chief sessions will be held at the Central Hall, Westminster. Papers will be read on every phase of milk production and distribution, and farms and dairy plant will be inspected. From July 10 the congress headquarters will be at the Royal Agricultural Show, Nottingham. At this show there will be the largest exhibition of dairying machinery ever seen in Britain, staged specially for the visitors.

### Merchandise Marks for Pumps

The Standing Committee (General Merchandise) appointed by the Board of Trade will hold their inquiry as to whether pumps of all descriptions, and parts thereof, should bear an indication of origin, at 11.30 a.m. on Monday, July 9, and at 10.30 a.m. on Tuesday, July 10. The inquiry will be held at the Board of Trade Offices, Great George Street, London, S.W.1. Communications should be addressed to the Secretary, Mr. E. W. Reardon, at that address.

### The United States and the Quinine Monopoly

In order to make the United States independent of the Dutch Quinine Monopoly there are two possibilities: either the quinine industry must be developed in the Philippines, or quinine or similar products must be obtained from sources different from those used hitherto. In both cases, a long time will be required before any judgment as to prospects can be made. It must be remembered that the development of the Dutch quinine industry in Java required many years of work.

# Company News

ANGELA NITRATE CO.—A final dividend of 5 per cent., less tax, is proposed, making 10 per cent. for the year.

BOOTS PURE DRUG CO.—The quarterly dividend of 24 per cent. per annum, less tax, on the ordinary shares, is payable on July 2.

COURTAULDS, LTD.—A final dividend of 4s. per share, less tax, is recommended on the preference shares, and £8 per share, free of tax, on the ordinary shares.

BURMA CORPORATION, LTD.—The directors have declared a final dividend (No. 11) of 6 annas per share, free of Indian and British income taxes, payable on July 14.

MARGARINE UNION, LTD., and N.V. MARGARINE UNIE.—An interim dividend of 4 per cent. has been declared on the ordinary shares of both these margarine companies.

BARROW, HEPBURN AND GALE.—The payment is announced, less income tax, on June 30, of a further instalment of 4½ per cent. in respect of dividend arrears on the 6 per cent. preference shares.

BRITISH GLUES AND CHEMICALS, LTD.—A reduction of capital was sanctioned in the Chancery Division on Monday, from £2,000,000 to £1,300,000, by writing 16s. per share off the 875,000 issued ordinary shares.

UNITED INDIGO AND CHEMICAL CO.—The directors have decided that a dividend at the rate of 5 per cent. per annum, subject to income-tax at 4s., for the six months ending June 30, be paid in respect of the preference shares.

BLEACHERS' ASSOCIATION.—A profit of £898,576 is reported for the year ended March 31 last, after allowing for central charges, including £454,442 for maintenance and repairs. After allowing £200,000 for depreciation and £101,250 for debenture interest, the net profit is £597,326. An ordinary dividend of 2s. per share is proposed, of which 6d. per share has been paid as an interim, £75,000 is placed to reserve, and £298,073 is carried forward.

CONSETT IRON CO.—The profit for the year ended March 31 last is £300,322, of which £150,000 is absorbed by debenture interest, leaving a net profit of £150,322. After deducting this amount from the debit balance of £464, 250 brought forward, there remains £313,929, to which is added £4,852 written off special expenditure, leaving a balance at debit of profit and loss account of £318,781, which has been written off by the transfer of that amount from reserves, leaving the latter at £871,151.

MINERALS SEPARATION, LTD.—The report for the year ended December 31, 1927, states that the profit and loss account shows a credit balance amounting to £34,122, as against £26,688 for the previous year. The directors recommend a dividend at the rate of 12½ per cent. per annum (equivalent to 2s. 6d. per share), less income tax, on the paid up capital be paid on June 21, 1928. On the same date will also be paid an interim dividend in respect of the year ending December 31st, 1928, of 5 per cent. per annum (equivalent to 1s. per share), less income tax, on paid up capital. The annual meeting will be held at Winchester House, London, on June 21, at 12 noon.

BRITISH PHOTOGRAPHIC INDUSTRIES.—In their report for the year to December 31, 1927, the directors state that the profits of subsidiary companies for 1927 were £52,122 (against £32,579). The parent company's books were closed on December 31 instead of April 30, and the whole of the subsidiaries' profits for 1927 have been declared as dividends payable to the parent company. Thus the accounting period of the parent company was for eight months only, but the profits handed over to it were for a complete year. The net profits of the parent company were £52,468. A dividend for the period to December 31 last on the ordinary shares at the rate of 6 per cent., tax free, has been paid, £10,000 is placed to general reserve and £8,987 carried forward (against £73).

J. M. NEWTON VITREO-COLLOID (1928), LTD.—Particulars were advertised on Wednesday, for information only, of this company formed to manufacture Vitreo-Colloid, which is described as a substitute for and an improvement on glass, celluloid, mica and transparent paper. The capital of the company is £250,000, divided into 1,500,000 ordinary shares of 2s. each, and 1,000,000 deferred shares of 2s. each. The consideration payable to the vendors, the J. M. Newton Vitreo-Colloid Co., Ltd., is stated to be £103,000 to be satisfied by the allotment of 1,000,000 deferred shares of 2s. each, and £3,000 in cash. No royalties are payable to the vendors. The directors consider that, after payment of the cost of a new factory and the initial lay-out of machinery and plant, to give an output of 11 tons per week and all preliminary expenses, there will be left available for working capital and for further extensions the sum of £60,000.

# New Chemical Trade Marks

### Applications for Registration

*This list has been specially compiled for us from official sources by Gee and Co., Patent and Trade Mark Agents, Staple House, 51 and 52, Chancery Lane, London, W.C.2, from whom further information may be obtained, and to whom we have arranged to refer any inquiries relating to Patents, Trade Marks, and Designs.*

*Opposition to the Registration of the following Trade Marks can be lodged up to June 30, 1928.*

489,971. Class 1. Chemical substances for mixing with motor fuel, to prevent knocking. Standard Oil Company of New Jersey (a Corporation organised and existing under the laws of the State of Delaware, United States of America), 7, West Tenth Street, Wilmington, State of Delaware; and 26, Broadway, New York, State of New York, United States of America; manufacturers, refiners and merchants. March 29, 1928. (To be Associated. Sect. 24.)

GRODYL.

490,537. Class 2. Chemical substances used for agricultural, horticultural, veterinary and sanitary purposes. Bayer Products, Ltd., 31 to 34, Basinghall Street, London, E.C.2; merchants and manufacturers. April 18, 1928.

*Opposition to the Registration of the following Trade Marks can be lodged up to July 6, 1928.*

"BRUSELLO."

488,603. Class 1. Cellulose paints and cellulose enamels. Sissons Bros. and Co., Ltd., Bankside, Sculcoates, Hull; varnish, paint, colour, and oil manufacturers. February 17, 1928. (By consent.)

## Chemical Trade Inquiries

***The following inquiries, abstracted from the "Board of Trade Journal," have been received at the Department of Overseas Trade (Development and Intelligence), 35, Old Queen Street, London, S.W.1. British firms may obtain the names and addresses of the inquirers by applying to the Department (quoting the reference number and country), except where otherwise stated.***

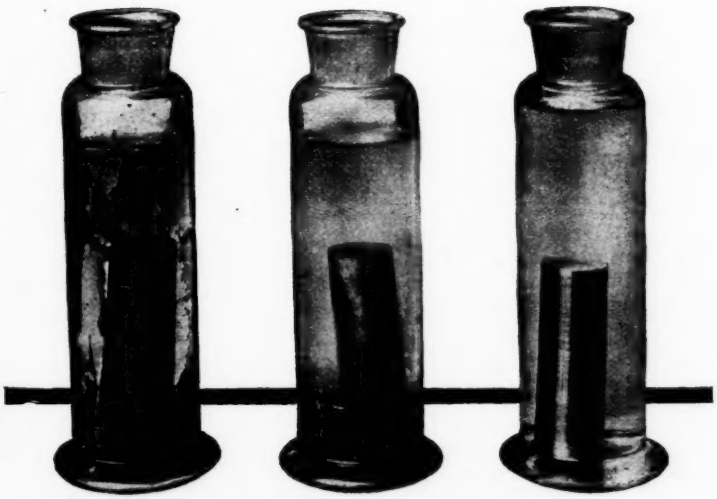
CHEMICAL, PHYSICAL AND ELEMENTARY SCIENCE SUPPLIES—CATALOGUES AND PRICE LISTS.—The department of Overseas Trade has received a request from Canada for catalogues and price lists of British manufacturers of chemical, physical and elementary science supplies. (Ref. B.X. 4489.)

## Tariff Changes

BRITISH INDIA.—*The Indian Trade Journal* of May 10 publishes Customs notification No. 26 which exempts ammonium phosphates from import duty.

CHILE.—A Decree of March 22 permits the export of zinc waste.

ROUMANIA.—A recent law prohibits the import manufacture, stocking or trade in narcotic drugs except by institutions authorised by the Ministry of Health and by pharmacists.



The illustration shows the marked superiority of Firth Staybrite (right) over mild steel (left) and stainless steel (centre) after immersion in sea-water for over 2 years

# FIRTH STAYBRITE

when in its correctly Heat-treated condition has such a wide range of resistance to the attacks of acids & corrosive media that in this respect it is

## SECOND ONLY TO

## GOLD AND PLATINUM

PLANT and vessels made from Firth Staybrite possess remarkable qualities of resistance to corrosive influences even after the various fabricating operations. Final application of the recommended heat treatment (cooling in air or water from 1,100° or 1,200° Centigrade) will, however, considerably enhance their qualities of resistance to a still wider range of chemicals. Full technical information on the subject of final heat treatment will gladly be tendered upon request.

*Write for Booklet 31 on this subject, which tells you more about this remarkable steel.*

## THOS. FIRTH & SONS, LTD.

SHEFFIELD

# Commercial Intelligence

*The following are taken from printed reports, but we cannot be responsible for any errors that may occur.*

## Mortgages and Charges

[*NOTE.—The Companies Consolidation Act of 1908 provides that every Mortgage or Charge, as described therein, shall be registered within 21 days after its creation, otherwise it shall be void against the liquidator and any creditor. The Act also provides that every Company shall, in making its Annual Summary, specify the total amount of debts due from the Company in respect of all Mortgages or Charges. The following Mortgages and Charges have been so registered. In each case, the total debt, as specified in the last available Annual Summary, is also given—marked with an *—followed by the date of the Summary, but such total may have been reduced.*]

TAYLOR'S DRUG CO., LTD., Leeds. (M., 16/6/28.) Registered May 31, £206,500 mortgage, to Phœnix Assurance Co., Ltd., King William Street, E.C., and Eagle Star and British Dominions Insurance Co., Ltd., 1, Threadneedle Street, E.C.; charged on various properties in the provinces. *£154,228 14s. 4d. December 5, 1927.

## London Gazette, &c.

### Companies Winding Up Voluntarily

J. M. NEWTON VITREO-COLLOID CO., Ltd. (C.W.U.V., 16/6/28.) By special resolution, May 14, confirmed May 30. W. H. Chantrey, Africa House, Kingsway, London, Chartered Accountant, appointed as liquidator for the purposes of reconstruction. Meeting of creditors at liquidator's office, Monday, June 18, at 11 a.m. (This notice is purely formal as all creditors have been, or will be, paid in full.)

AIM (W. L.) AND CO., LTD. (C.W.U.V., 16/6/28.) By special resolution May 8, confirmed May 29. H. F. Brown, of Riverside Works, South Shore Road, Gateshead,on-Tyne, appointed liquidator. Meeting of creditors at the registered office of the company, 57-59, Cornwall Street, Glasgow, on Thursday, Jun 14, 1928, at 10.45 a.m.

### Bankruptcy Information

SMITH, Wilfred, 37, Great Tower Street, London, E.C., chemical merchant and agent. First meeting, June 18, 11.30 a.m., and public examination, July 17, 11 a.m., Bankruptcy Buildings, Carey Street, London, W.C.2.

## New Companies Registered

PETROLEUM STORAGE AND FINANCE CORPORATION, LTD., Royal Bank Buildings, 5, Bishopsgate, London, E.C. Registered as a "public" company on June 6. Nominal capital £250,000, in 200,000 ordinary shares of £1 each and 1,000,000 deferred shares of 1s. each. The objects are to adopt an agreement with the Cleveland Petroleum Products Co., to develop and turn to account the business described therein, and to carry on the business of shippers, merchant bankers, importers, exporters, etc., of and dealers in petroleum, kerosene, benzine, gas oil, lubricating oil, fuel oil and other mineral oils and products.

STERNOL, LTD.—Registered as a "public" company on June 7. Nominal capital £250,000, in 400,000 8 per cent. cumulative participating preferred ordinary and 100,000 deferred shares of 10s. each. To acquire the benefit of the trade mark "Sternol" and the goodwill of the business defined in an agreement with Sterns, Ltd., and hitherto carried on by that company in connection therewith, and to carry on the business of manufacturers, distillers, refiners, purifiers, blenders, importers and exporters of and dealers in petroleum and petroleum products and oils, greases and fats, whether animal, mineral, vegetable or synthetic, and their derivatives, etc. A subscriber: F. T. Smith, 1, Finsbury Square, London, E.C.

WILSON, PARKER AND BRISTOW, LTD., 3-4, Clement's Inn, London, W.C. Registered June 6. Nominal capital £500, in 1s. shares. To carry on the business of engineers, particularly in connection with low-temperature carbonisation; to erect and maintain works for carbonising coal and distilling and refining oils and preparing therefrom separate products for sale and of producing chemical materials and other substances, etc. Directors: R. P. Wilson, C. H. Parker, and W. A. Bristow.

## Petroleum Co.'s Winding-up Petition Dismissed

A PETITION to wind up the Scottish Petroleum Co., Ltd., presented by an American company, the Union Creosote and Oil Co., Inc., came before Mr. Justice Maugham in the Companies Winding-up Court, on Monday.

Mr. Buckmaster appeared for the petitioners, Mr. Vanreck for the voluntary liquidator of the respondent company, and Mr. Clayton, K.C., and Mr. Turner, for opposing creditors.

Mr. Buckmaster said the debt on which the petition was based arose under a contract for the sale of certain barrels of lubricating oil shipped to the company on consignment. He submitted that the petitioners were entitled to an account of such oil as had been sold by the respondent company, and to a return of the oil not sold or to payment in full, because the barrels were sent on consignment, and the company were merely agents for the disposal of them. The amount claimed was £497 15s. for 150 drums. His clients could not get information with respect to these 150 drums.

His lordship: Is the company prepared to do something in the way of giving information?

Mr. Vanreck: The liquidator is perfectly prepared to produce anything your lordship directs.

Mr. Clayton, for the opposing creditors, submitted that there was no case for a compulsory liquidation.

His lordship said the petitioners were entitled to information as far as could be gathered, either on the spot or from the books and papers of the company, to enable them to formulate their claim. He was unable to come to the conclusion that the continuance of the voluntary liquidation could constitute a prejudice in the way of the petitioners, and he had no option, therefore, but to dismiss the petition, with costs.

## Acetas Asphalt

THE Limmer and Trinidad Lake Asphalt Co., Ltd., have just issued a brochure calling attention to the acid-resisting qualities of the material supplied and laid by them under the trade name of "Acetas Asphalt." This special brand of asphalt is manufactured in three grades for use according to the requirements of the situation, and the factors guiding the choice of grade are fully discussed in the brochure, which includes also a long list of Acetas Asphalt contracts and details of the company's organisations. Applications for copies may be made to the head offices of the company at 34, Victoria Street, Westminster.

## The John Benn Hostel Ballot

GIFTS of prizes for the John Benn Hostel Ballot are still being received from our readers, for which Sir Ernest Benn is most grateful. Ballot tickets will be issued in the next few days, and those firms or individuals who wish to sell them are asked to send their names and addresses to the Ballot Organiser, c/o Sir Ernest Benn, Bouverie House, Fleet Street, London, E.C.4. Needless to say, further gifts for prizes will be welcomed.

## Benn Brothers' Other Journals

THE CABINET MAKER.—Metal Bedsteads; Retailers and Hire Purchase; I.A.R.D. Conference.

THE ELECTRICIAN.—Annual Power Station and I.M.E.A. Convention Number: Full Report of the I.M.E.A. Annual Convention; "Grid Problems," by Dr. C. C. Garrard; "Spring Cleaning in the Central Station," by C. Sylvester.

THE FRUIT GROWER.—Apple Thinning for Profit; Carnation Troubles; "A Progressive Industry," by F. J. Fletcher.

GARDENING ILLUSTRATED.—June Flowering Irises; Report of the Iris Show; Children and Gardens; Plants for the Bog Garden.

THE GAS WORLD.—Special Institution Number: Full Report of Annual Meeting of the Institution of Gas Engineers at Cardiff.

THE HARDWARE TRADE JOURNAL.—The New Duty on Imported Hollow-ware; The Advertising Convention; Sir Gilbert Vyle on Business Research; The Students' Notebook; Cellulose Paints.

THE TIMBER TRADES JOURNAL.—Timber Trades Examination Results; Ash for Motor Bus Bodies; More Soft Woods Storage Room at the London Docks; The Great Latvian Jam; The Portable Sawmill.